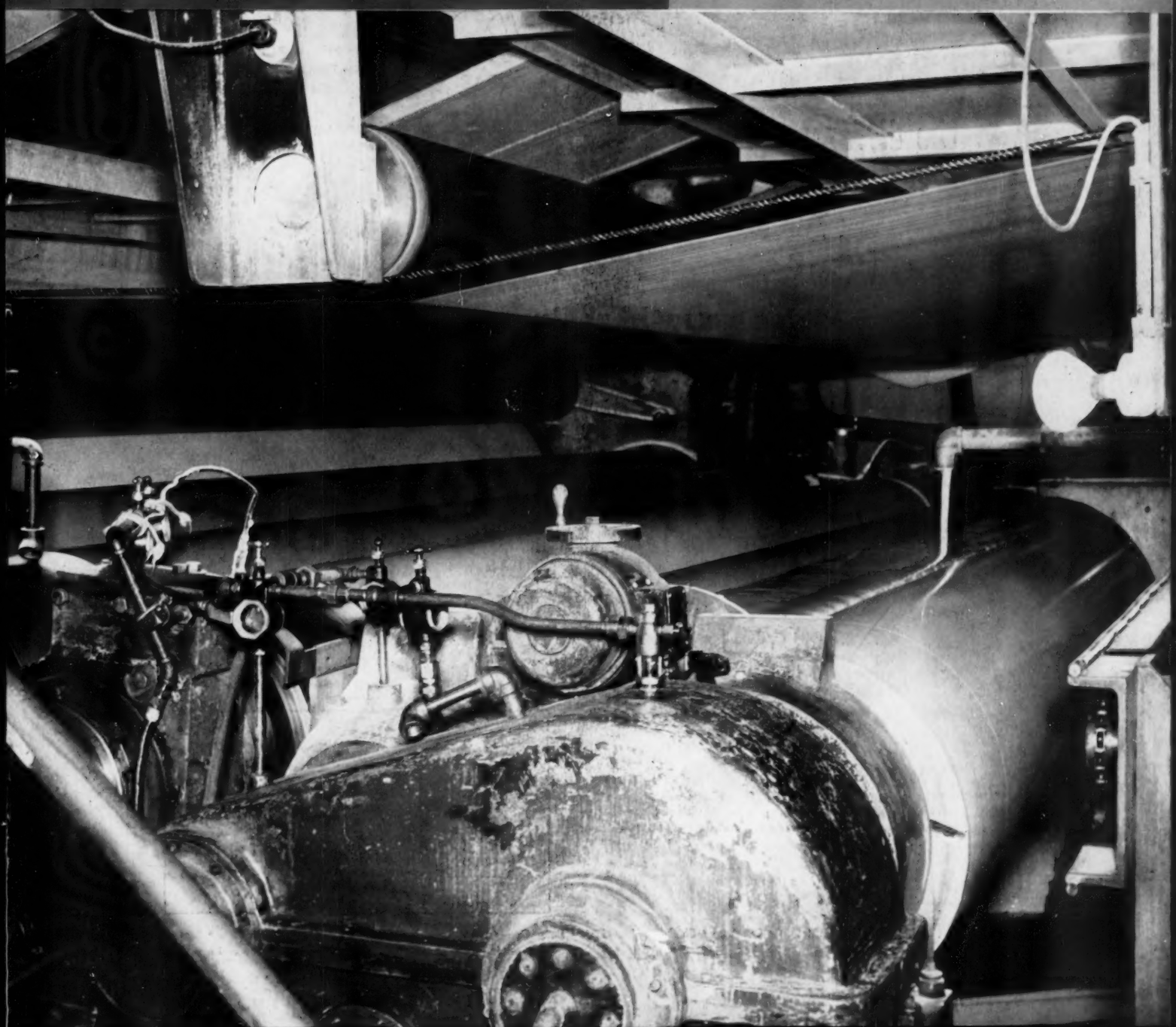
PULP & PAPER

How St. Regis Switched Bucksport to Coated Book *see page 42*

Expert Abroad Takes a Look at World Pulp Picture *see page 52*

How Everett Mill Kept Producing While Modernizing *see page 80*



INSIDE VIEW of one of country's largest coating operations, showing lower deck of coater at St. Regis mill, Bucksport, Me.

AUGUST 1954

the difference is

"How fast it moves" with PAREZ® Resin 607

the Melostrength* resin

A fast mover in the mill . . .

Papers treated with PAREZ Resin 607 achieve exceptionally high wet strength *right off the machine*, eliminating delays for testing, saving warehouse space.

PAREZ 607 gives uniform, high wet-strength results, prevents possible loss of time—and stock—because of "below-specification" runs. Adequate stocks of resin can be kept on hand for immediate use since PAREZ 607 has excellent storage stability.

A fast mover in the market . . .

Melostrength papers meet highest specifications for dependable wet strength.

. . . they are backed by the national *Melostrength* promotion program, which is gaining wide acceptance for these papers among converters, jobbers and consumers.

It will pay you to investigate—ask your Cyanamid representative for full details.

THE LARGEST VARIETY OF PAPER CHEMICALS, *to serve every industry need, is offered by Cyanamid, and is backed by the services of technical experts with years of practical mill experience.*

*Trade-mark

Recent Mill Developments with Cyanamid Paper Chemicals...

BETTER SHEET FORMATION is credited to ACCOCEL® 741 when added in very small amounts to the breaker beater, according to an Indiana mill. The mill reports better disintegration of fiber bundles and improved dispersion and distribution of rosin size.

* * *

IMPROVED RETENTION OF FINES is another "plus" scored with Sodium Phospho Aluminate. This is especially important in mills where the white water system is not a closed system and considerable fines would ordinarily be lost in the discharge of waste water. Prevention of stream contamination is also a potential benefit.

* * *

GREASE-PROOFING WITHOUT BRITTLENESS is accomplished with the aid of ALWAX® 253 series of wax sizes. Developed especially to work with silicate of soda, ALWAX 253 cuts down the silicate's brittleness, and eliminates sticking at the calenders.

* * *

TO ELIMINATE HARSHNESS AND RATTLE on lightweight aluminum foil backing papers, CYNOL® 761 is being employed by a Wisconsin mill in 1% concentration on fiber. Results are consistently good, and the procedure is now standard at this mill.

AMERICAN *Cyanamid* COMPANY
PAPER CHEMICALS DEPARTMENT
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Sales Offices: Boston • Charlotte • Chicago • Cleveland • Kalamazoo • Los Angeles • Mobile • New York • Philadelphia • Seattle
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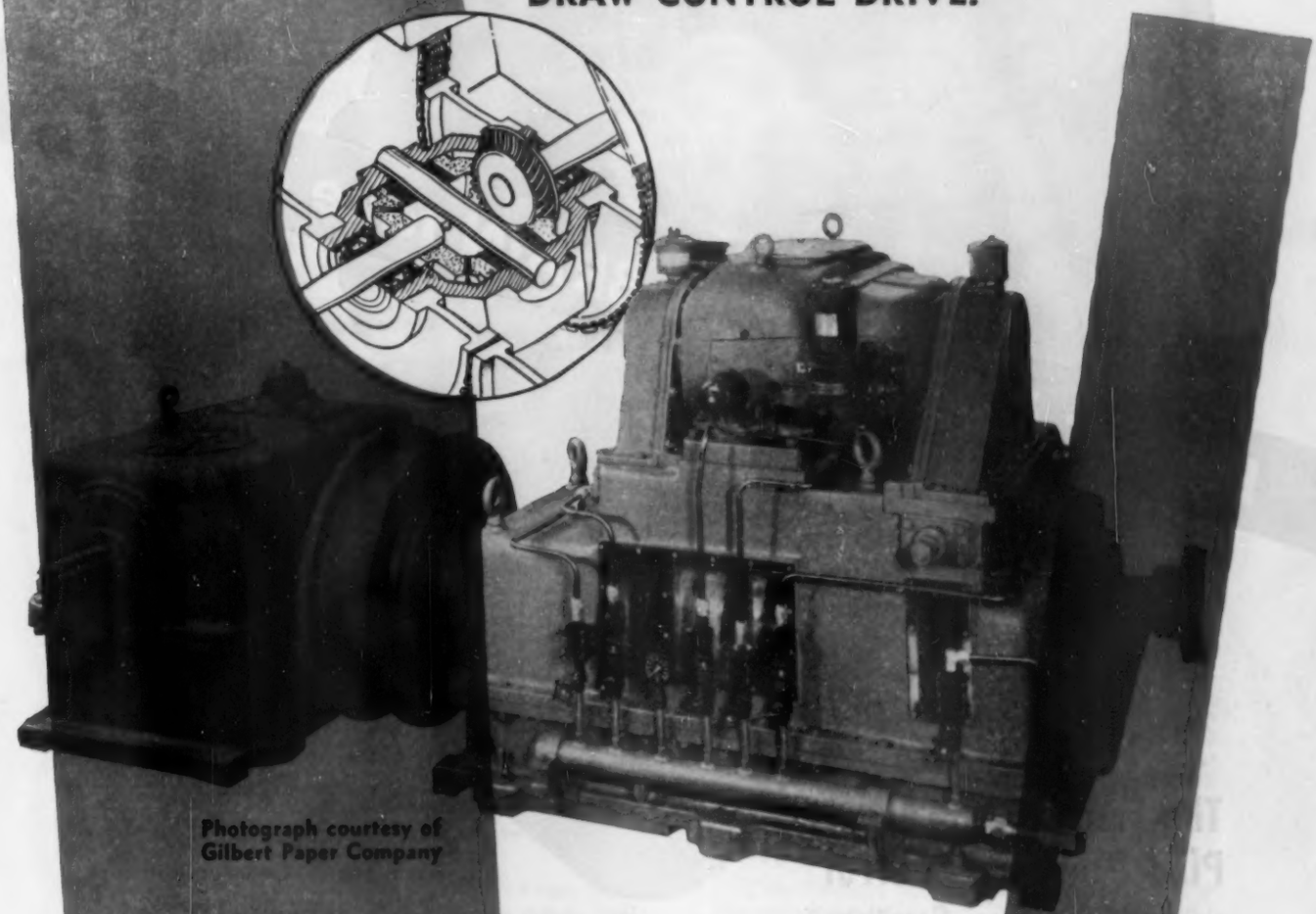
Experience

DICTATED THE SPECIFICATIONS FOR THE RICE BARTON DIFFERENTIAL DRAW CONTROL DRIVE.



Photograph courtesy of Gilbert Paper Company

- A simple self-contained differential drive unit that consistently maintains precise draw control.
- A unit separate from the line shaft, with its clutch on the high-speed intake shaft, so that unit is completely at rest when its section is shut down.
- A unit with designed accessibility for easy maintenance.

RICE BARTON

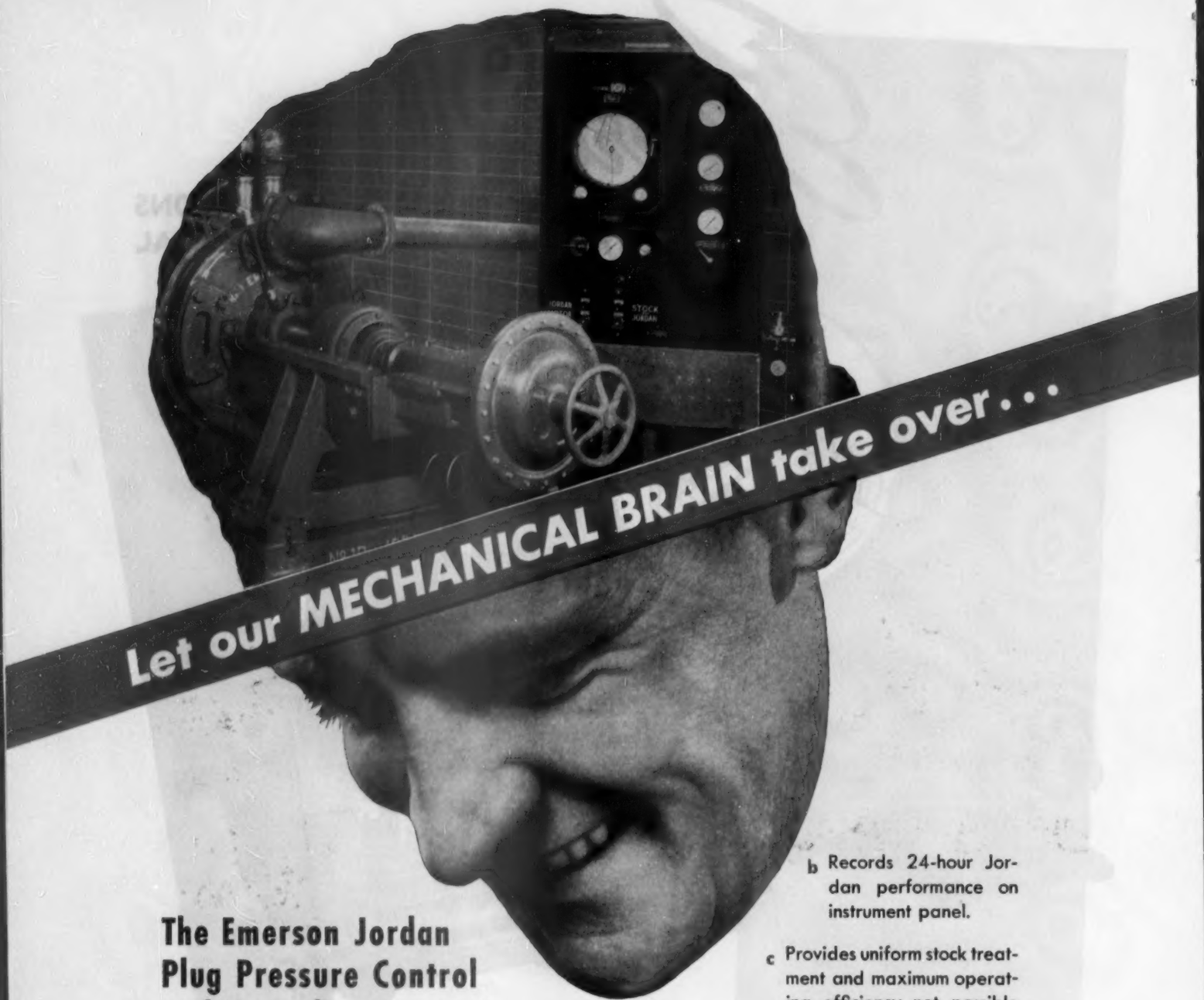
RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor: Ray Smythe • • 501 Park Building • Portland, Oregon

RBB-54



The Emerson Jordan Plug Pressure Control and Recording System*

a Automatically maintains predetermined pressure between plug and shell knives, eliminating manual resetting.

b Records 24-hour Jordan performance on instrument panel.

c Provides uniform stock treatment and maximum operating efficiency not possible under manual control.

d Foolproof control system backs off the plug automatically if the Jordan motor or stock pump motor stops, if stock falls below predetermined level in the head box, or if flow of stock to the Jordan inlet stops.

* *Patented. Engineered and applied exclusively by The Emerson Manufacturing Company.*

Consult our Sales Engineers for more information

The Emerson Manufacturing Co.

Division of John W. BOLTON & Sons, Inc.
Lawrence, Massachusetts, U. S. A.

PULP & PAPER

Production and Management Magazine of the Industry

August, 1954
Vol. 28—No. 9

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COMMENT

PULP & PAPER'S World Review

Subscribers to PULP & PAPER have now received their copies of our 27th Annual Review Number, with statistical reports and reviews from more than 44 countries. These reports not only tell what has happened in the past, but often set the stage for predictions of what is to happen in the future.

How did we get the data which fills this 230-page book? Not only from PULP & PAPER's regular staff members, but also in good part through exclusive reports to this publication from industry members throughout the world . . . from men who have come to know and respect PULP & PAPER through years of contact, and who are proud to play a part in compilation of important industry data.

We thank them for this cooperation, and we know the industry will echo this appreciation as it becomes familiar with the results of their efforts.

Did you get your copy of the Review? If not, better check your subscription. This is a particularly useful number to have around, for use now and in the future.

Advice for that Harried Executive

Vice President William T. Webster of National Container Corp. told this to one of our traveling editors—good advice for busy executives in this industry:

"This is a recipe for long life—from a Southern gentleman:

"When you walk, walk slow.

"When you set, set loose.

"And when you are worried, go to sleep."

Slogan for This Year, Perhaps

"Competition is so tough today, one has to do his almost best."

This Groucho Marx quip on TV seemed worth repeating here. This industry's Sydney Ferguson had his own sly quip along this line when he called for a 5% greater effort this year in selling and then observed that what he really meant was only 5% greater than virtually no effort at all!

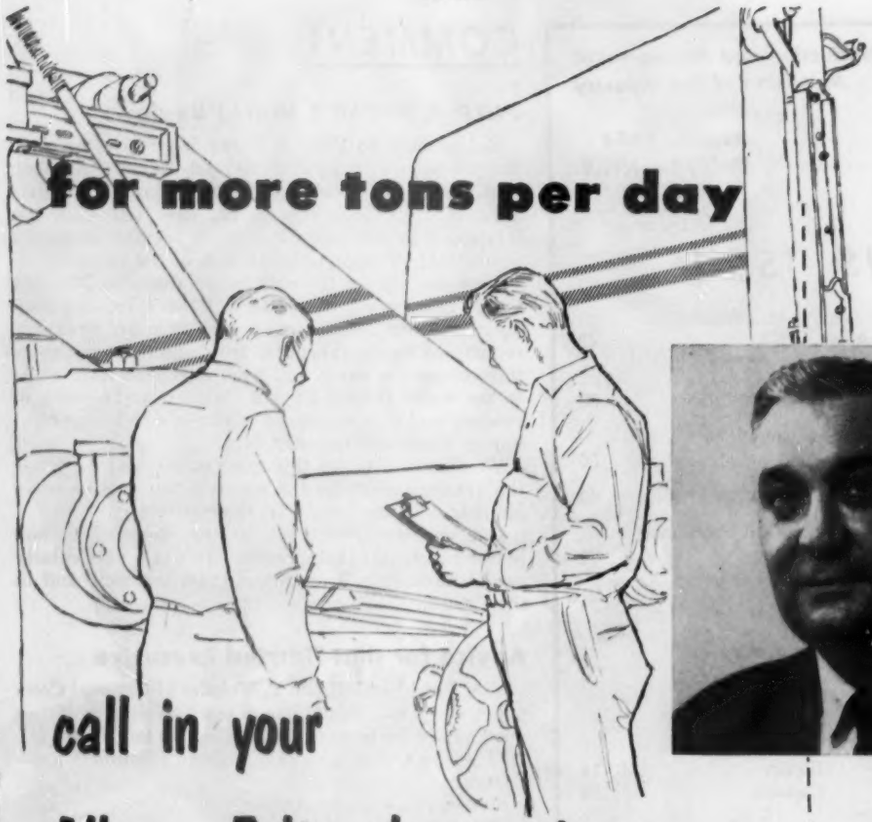
It Wasn't True . . .

If the Almighty did not understand us better than we understand each other, . . . hope would die and the mourners would go about the streets.

A few days ago a business man told us he was worried to the point that it was unfitting him for his work, due to the fact that a rumor had come to him that a trusted friend and business associate had done something which, if true, would force him to sever their friendly and business relations.

We advised him to call the party in, lay the cards face up and talk it over. This morning he beamed as he met us and said, "Thank goodness I took your advice. It was all a misunderstanding and everything is cleared up fine."

Much of whatever trouble and disturbance have come to us during the years of our business life, has been caused by mutual misunderstandings; but we have now reached a point where we insist upon "talking it over" rather than jumping at hasty conclusions based upon surface indications—*"Uncle Jake" Kindleberger, late President of KVP Co.*



for more tons per day

call in your

Albany Felt sales engineer

Albany sales engineers constantly strive to improve felt performance on your machines. They are trained in felt making, paper making, and especially in the proper application of individually designed, custom-made felts. They are backed up by the industry's leading service engineers and designers, outstanding chemical and mechanical laboratories, an extensive research and development program, and a product *famous* for uniformity. Ask your Albany Felt sales engineer to make a felt performance check with you on his next regular call. The goal: MORE TONS PER DAY.

William H. Schaffner

Serving paper mills throughout the states of New York and Connecticut for 14 years, he has been associated with the Albany Felt Company since 1926. Recently he was transferred to a territory in the Central South. Many Superintendents have benefited from Mr. Schaffner's discussions regarding felts and their application.

FREE! Felt Performance Record Book for Mill Superintendents, Managers, Purchasing Agents. Write for your handsome leather binder containing convenient forms for maintaining records and graphs of felt performance, felt inventory, etc.

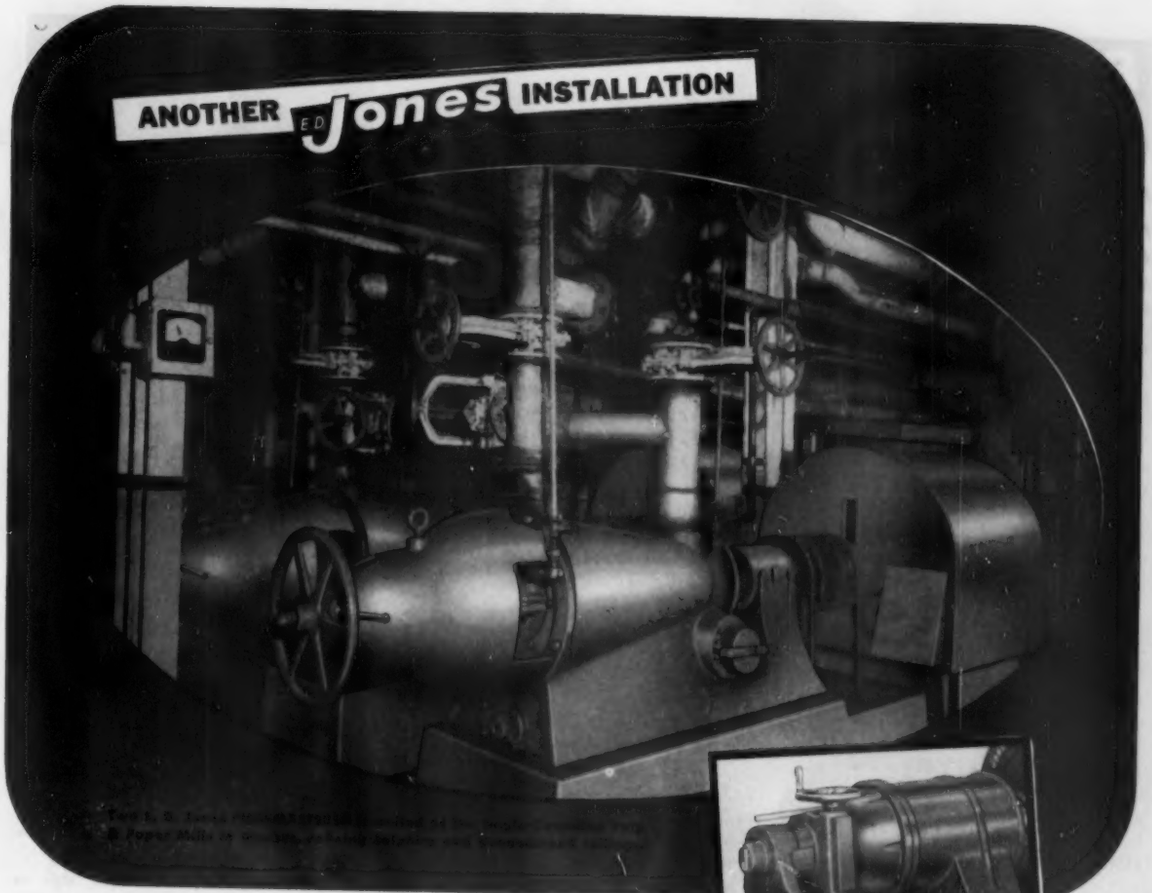
ALBANY FELT COMPANY

World's Largest Manufacturer of Paper Machine Felts

MAIN OFFICE AND PLANT, ALBANY 1, NEW YORK

Other plants: Hoosick Falls, N. Y., North Monmouth, Maine, Cowansville, Quebec

ANOTHER E.D. Jones INSTALLATION



30 tons per day per unit on screenings

That's the production of these two Fibremasters at Anglo-Canadian. Rugged machines for rugged work. Power usage only 160 HP per unit. Freeness drop from 750 cc to 500 cc (CSF).

The Fibremaster, though it requires relatively small floor space, has twice the capacity of the well-known Jones High-Speed Refiner — without sacrificing any of the features that have made the smaller machine so popular.

As a general utility unit, on all stocks from news to rag, the Fibremaster combines flexibility, improved stock control, low power and maintenance cost. Ask your Jones representative or write for Bulletin No. 1035.

Now available with ACCRU-SET® automatic plug adjustment

This latest triumph of Jones engineering provides completely automatic, completely reliable control of plug adjustment for uniform, pre-determined treatment throughout your run, less operating horsepower, adequate protection for plug and shell fillings if power or stock flow fails. Easily installed on any Jones Jordan, Fibremaster, Stockmaster or Refiner. Write today for our Bulletin No. EDJ-1057.

E.D. Jones

E. D. JONES & SONS COMPANY
PITTSFIELD, MASSACHUSETTS

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

PULP & PAPER PERSONALS

MIDDLE WEST NOTES

New Top Executives At Appleton Woolen Mills

WESTBROOK STEELE, president of the Institute of Paper Chemistry, Appleton, has been elected honorary fellow of the American Institute of Management. *A. H. WICKESBERG* has become chairman of the board of Appleton Woolen Mills, Appleton, Wis., relinquishing duties as general manager to *F. H. ORBISON* and as treasurer to *CHARLES P. HEETER*. *ANNA H. ORBISON* is president. *A. H. THUERER* was elected to the newly created position of vice pres. in charge manufacturing at Appleton Woolen Mills and *LELAND R. BARLAMENT* was named mill supt., and *OSCAR RADKE*, supervisor of quality control.

RALPH CASTON, K-C research engineer, Neenah, Wis., broke a leg in fall from his bicycle.

MRS. J. FRANK GRAY, wife of the chairman of River Raisin Paper Co. and co-founder of Williams-Gray Co., Chicago, died July 4 of a heart attack. She was 72.

ADAM REMLEY, v. p. of sales, Nekoosa-Edwards, which he joined in 1935, has retired.

IN WISCONSIN AND CANADA

C. Y. ROBSON (left) named Vice Pres. of Celgar Development Co., Celanese Corp. of America subsidiary, which plans an integrated pulp mill project in southeastern British Columbia. Mr. Robson has been a Director of the company since early this year, was formerly Manager at Port Alberni, B.C., of Bloedel, Stewart & Welch (now MacMillan & Bloedel).

GRAFF COLLETT (right), for the past 5 years Bus. Mgr. of the Sulfite Pulp Mfgrs. Research League in Appleton, Wis., has joined Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., to work on special projects, according to IRA F. BOYCE, Assistant to the President. Mr. Collett is a graduate of Kenyon College and MIT, was born in St. Joseph, Mo., and is a WW II veteran.

ARTHUR L. MORGAN is new maintenance foreman at Nekoosa-Edwards Port Edwards mill and *LAWRENCE GUSTIN* and *LOUIS GOTS*, new tour supervisors at Nekoosa.

LEROY SHOEMAKER has been named to the new post of supervisor of plant guards and watchmen at Mead Corp., Chillicothe, O. He has been with Mead 12 years and is 36. He graduated from Ohio U.

ONNI HARJU is new general accountant and office manager of Consolidated Water Power & Paper Co. at Wisconsin Rapids.

FRED HASELOW was recently promoted to chief engineer of Charmin Paper Mills. He had been power superintendent. He graduated from U. of Wisconsin.

HENRY G. WINTGENS, v. p. and asst. gen. mgr., Charmin Paper Mills, was honored at a Green Bay dinner for his 40 years with the firm. *J. M. CONWAY*, president, *JOHN MALONEY*, v. p., *MILAN BOEX*, pres. of Northern Paper Mills, and *WILLIAM SERVOTTE*, of Bay West Converting, paid tributes.

CHARLES H. SAGE, Kimberly-Clark vice pres., has been named to a new U.S. Congressional commission to study inter-government relations.

NORTHEAST NOTES

HERBERT H. HURLEY, Champion-International mill, in Massachusetts, and his wife made a trip to their native Birmingham, England, first in 33 years.

GUNNAR T. HANSSON, president of Elof Hansson, Inc., New York market pulp firm, has taken over full responsibility of sales with assistance of *ROBERT VAN SANT* and *JOSEPH SANTRY* following resignation of *THEODORE R. WILBERT*.

HALE HOLDEN JR., president of Byron Weston Co., Dalton, Mass., died suddenly June 30 at his summer home in Niantic, Conn.

LESTER J. SMITH has been made production manager of the Deferiet, N.Y. mill of St. Regis Paper Co. He was formerly resident manager of their Harrisville, N.Y. mill.

C. F. McGUNIGLE has recently been appointed vice president of the Syntron Baltimore Sales Co., Baltimore, Md.

THEY MANAGE GYPSUM MILLS

RECENTLY NAMED MANAGERS of National Gypsum Co. paper and gypsum mills are:

EUGENE M. BAKER (top left), Mgr. at Kalamazoo, Mich. Back in home state, where he graduated from West. Mich. College. Was Mgr. at Newburgh, N. Y. He is 38.

GEORGE COOK (top right), Mgr. at Mobile, Ala., promoted from Works Mgr. He is 44, born in New Orleans, graduated from La. State.

ARTHUR H. COSTAIN (lower left), Mgr. at Newburgh, N. Y. Many years in paper mills, he joined Nat. Gypsum in 1953. Born in Moorhead, Minn., he graduated from Kansas State, is 41.

FRED L. BUCHANAN (lower right), Mgr. at new mill in Pryor, Okla. He is 50 on Aug. 19, born in Middletown, O., attended Tri-State College, has been a papermaker 26 years.

E. J. WARD, salesmanager of Cameron Machine Co., Brooklyn, N.Y. announces the appointment of *AMOS GOOD* as sales representative for Penna, N. J., Maryland, Delaware, Virginia and W. Va.

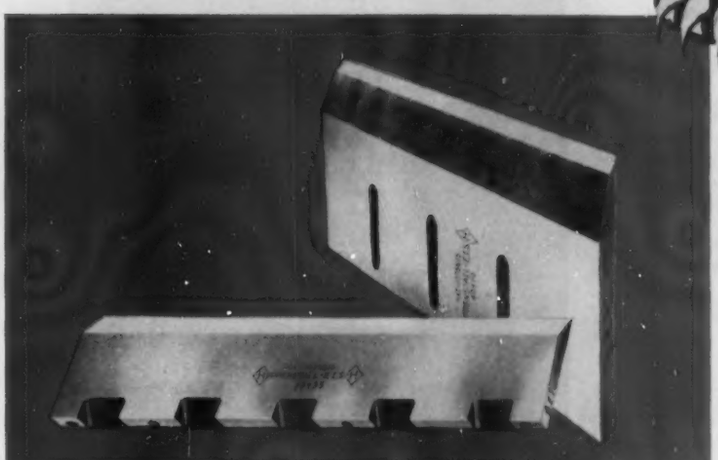
ANTHONY J. CIRRITO has been appointed assistant to the president of Rice Barton Corp., in connection with advance development and research.

O. C. CORDES, vice president of *DOWNINGTOWN* Mfg. Co., and *A. L. BOLTON*, Jr., treasurer of *EMERSON* Mfg. Co., Div. of John W. Bolton & Sons, Inc., announce that the two companies will collaborate on the sales of stock preparation equipment. *R. W. POLLEYS*, Downingtown asst. sales. manager, and *SAMUEL E. CROCKER*, Jr., Emerson sales manager, and their departments will assist in selection of equipment.

Continued on page 10

built for rugged action

Heppenstall CHIPPER KNIVES
durable blades for industry



Many leading pulp mills make Heppenstall their standard specification for chipper knives. Heppenstall's record for durability provides such production advantages as:

- **MORE CUTS BETWEEN GRINDS**
- **LESS OVERSIZE CHIPS**
- **LESS DOWN TIME**
- **LOWER OVERALL BLADE COST**

The reasons may be found in Heppenstall's high standards for the development and manufacture of chipper knives. Made from high quality, electric induction steels, these long-lasting knives are famous throughout the pulp producing industry.

Make Heppenstall *your* standard specifications.

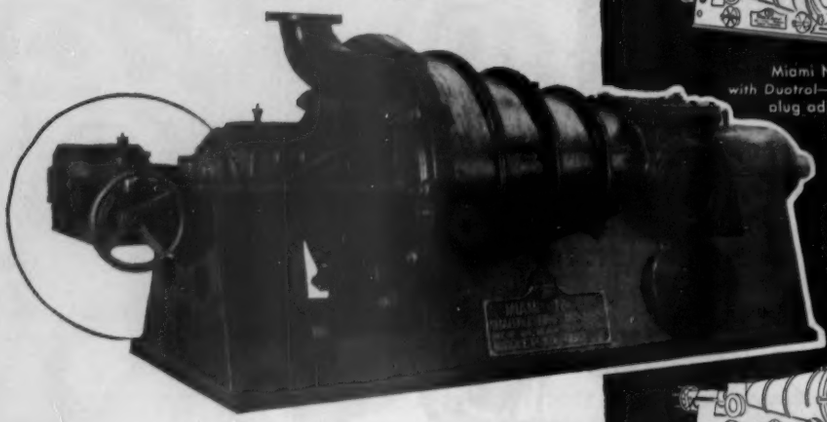
Heppenstall

The most dependable name in forgings

PITTSBURGH 1, PENNSYLVANIA

Sales offices in principal cities

the parade never stops



The day never dawns that finds the Shartle shops devoid of Miami jordan orders. True today. True every day for the last forty years. The parade never stops—and here's why.

- Sound engineering born of extensive, practical mill experience.
- Extra rugged construction of Shartle jordans, plus the precision machining that makes for smooth operation and low outlays for maintenance.
- The application of Duotrol* plug adjusters to provide automatic control of the plug—based on variations in volume and/or density of the stock in the line; or based on changes in the vacuum at the suction couch, if preferred.

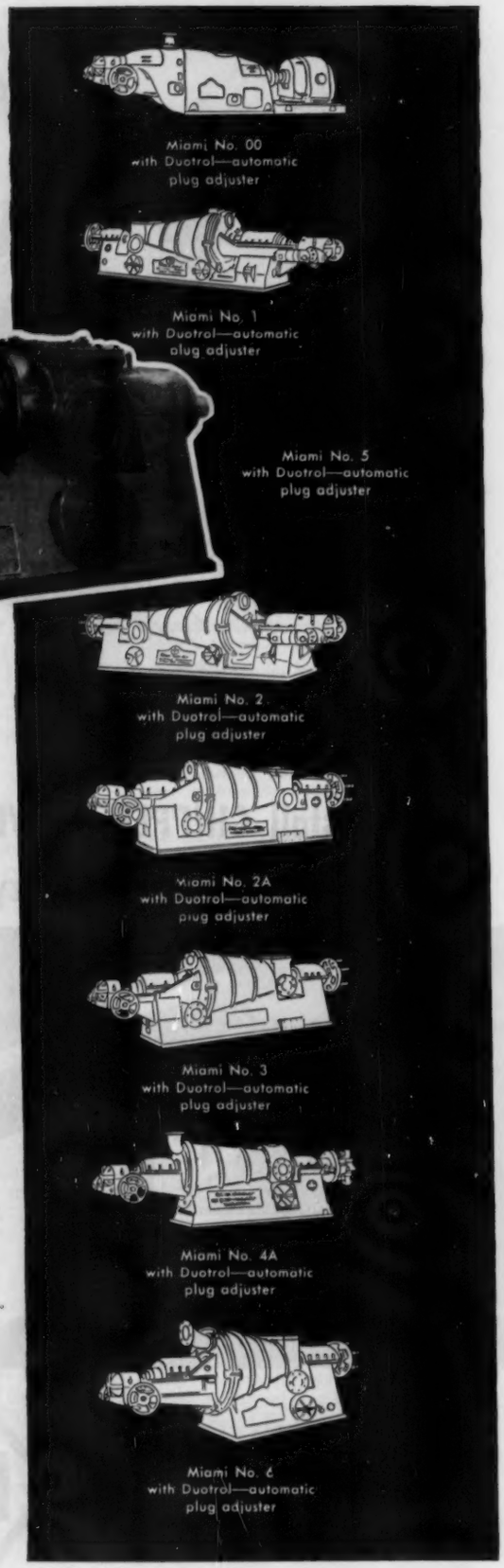
Given those many sound reasons for Miami superiority, plus the presence of a full range of sizes from which to choose, what wonder that the jordan parade at Shartle never stops.

Details and specifications upon request.

*Trademark

BLACK-CLAWSON

SHARTLE BROS. MACHINE DIVISION • Middletown, Ohio



PUGET PULP—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to* ***PUGET PULP.***

PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON

SOUTHERN NOTES

Laffman Takes It Easy; New Brandon Man in South

R. H. LAFFMAN, who had a long career at Jacksonville, Bogalusa and other mills in the South, is spending this summer at Hartford Ave., Saybrook Manor, Conn., telephone 3-3775. *W. E. GREENE*, president of W. E. Greene Corp., Woolworth Bldg., New York, sent in this item, saying Mr. Laffman is hungry for news from old friends and suggesting they write or call.

ROBERT S. DAVIS, 30 years old and 1950 graduate from Clemson College, will represent Brandon dryer felts in 11 Southern states, under direction of *KEN FRYFOGLE*, president of Brandon Sales Inc. Mr. Davis was born in Asheville, N. C., is married and has one son. He has been in purchasing and quality control work with Abney Mills, parent firm of Brandon Sales.

WALTER J. DAMTOFT, assistant secy. and director of Champion Paper's woods department, received a degree of doctor of forest science from North Carolina State College. He majored in forestry at Yale.

H. H. FLICKINGER, graduate of Syracuse and Yale forestry schools, has become International Paper's superintendent of woodlands at Georgetown, S. C. He was assistant to *J. E. McCAFFREY*, who vacated the post to be asst. gen. mgr. of Southern Kraft Division in charge of all its woodlands.

DONALD E. LAWSON, new assistant resident manager of Rayonier's Fernandina, Fla., mill, drove to Washington state to transport his wife, two daughters and three sons to their new home all the way across the U.S.

McCAFFREY, WALTON PROMOTED

J. E. McCAFFREY (left), veteran woods operations executive for International Paper, has been promoted to Asst. Gen. Mgr. in charge of Woodlands Operations of the entire Southern Kraft Division. He has been Woodlands Supt. at the big Georgetown, S.C., Mill. He first joined I.P. in 1938, returning after 4 yrs. with Army Engineers, in which he is a reserve Colonel. He graduated from Syracuse.

CHARLES L. WALTON (right), has been Production Mgr. of the Insulation Division of U. S. Gypsum Co., with headquarters in Chicago (612 No. Michigan Ave.). He was Gen. Mgr. of Simpson Logging Co.'s Fiberboard Division at Shelton, Wash., when he joined U. S. Gypsum recently as Production Engineer. He now lives at 1901 Lincoln St., Evanston, Ill. U. S. Gypsum has nine mills from Maine to California.

TO WISCONSIN WIRE WORKS

GEORGE T. CLAYTON, headquarters at 10 North F St., Pensacola, Fla., is new Sales and Service Engineer for the Southern states for Wisconsin Wire Works. He was former head of engineering for Moore & White.

Continued on page 14

• SCREWED
• FLANGED
• BUT WELD

Stocked in types 304, 304L, 316 and 347. Other analyses and materials on application.

FLANGES — *(Forged to ASA and MSS standards)* All flanges furnished with serrated face to insure positive gripping surface. Use of flanges to MSS standards suggested to effect substantial savings in cost.
FITTINGS — All screwed cylindrical fittings to 2" IPS inclusive and all ells, tees and street ells to ¾" IPS machined from forgings at competing cast fitting prices. Sizes over above machined from castings.

Use attached coupon for catalog covering complete line.

MAIL TODAY

CAMCO Products, Inc. PP
445 State Street
North Haven, Conn.

Gentlemen:

☐ Please send catalog #653 covering Corrosion Resistant Pipe Fittings

☐ Furnish address of area distributor

Name _____

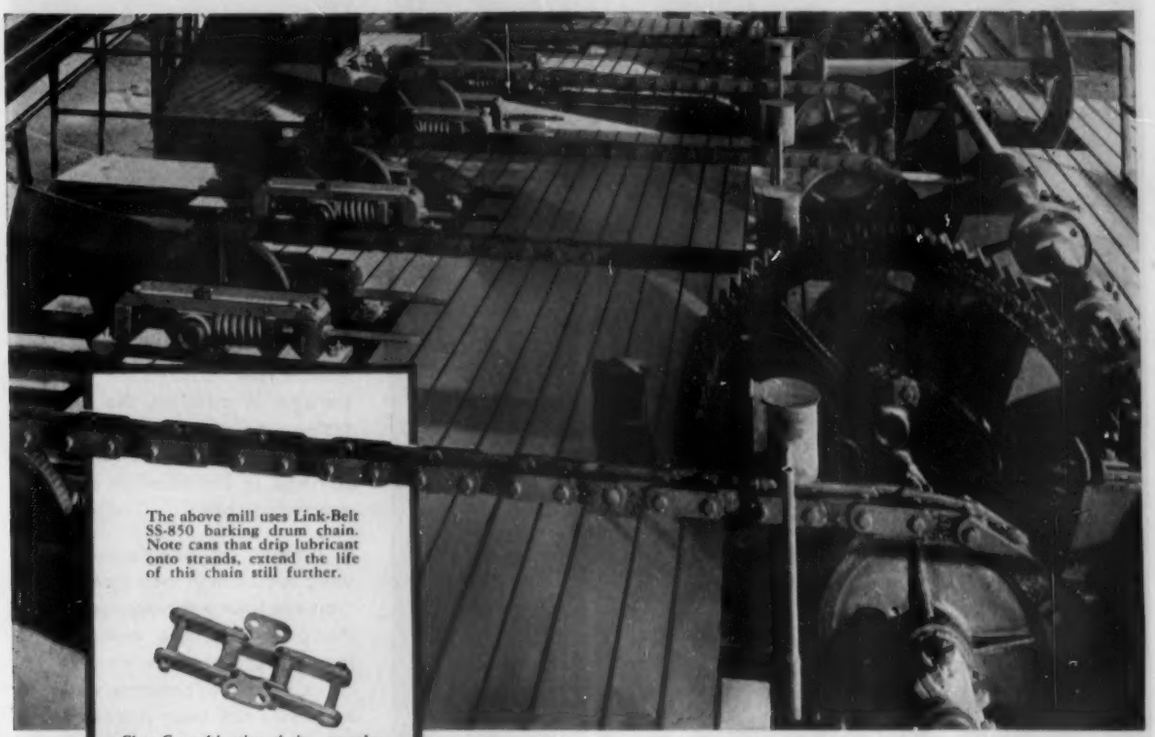
Company _____

Address _____

City and State _____

CAMCO Products, Inc.
445 STATE STREET, NORTH HAVEN, CONNECTICUT

HERE'S the long-lived chain for barking drum service



The above mill uses Link-Belt SS-850 barking drum chain. Note cans that drip lubricant onto strands, extend the life of this chain still further.

Class C combination chain—popular, durable, low-cost design for elevators and conveyors.

Rivetless chain, with its light weight and high strength, is ideal for conveyors.

Class H combination drag chain offers long life for tough refuse conveying. Rigid block links are reversible.

LXS chains are made to close tolerances from carefully selected steels. Ideal for rugged drive and conveyor service.

Specify SS-850 — from LINK-BELT's complete line of chains and sprockets

TO WITHSTAND rough barking drum service, Link-Belt builds extra life into this chain. On SS-850, all wearing surfaces in the joint are hardened, providing hardened surfaces which contact the sprocket. Heat-treated sidebars minimize distortion, preserve press fit throughout the chain's long life. And the sidebars are extra-thick for greater bearing area.

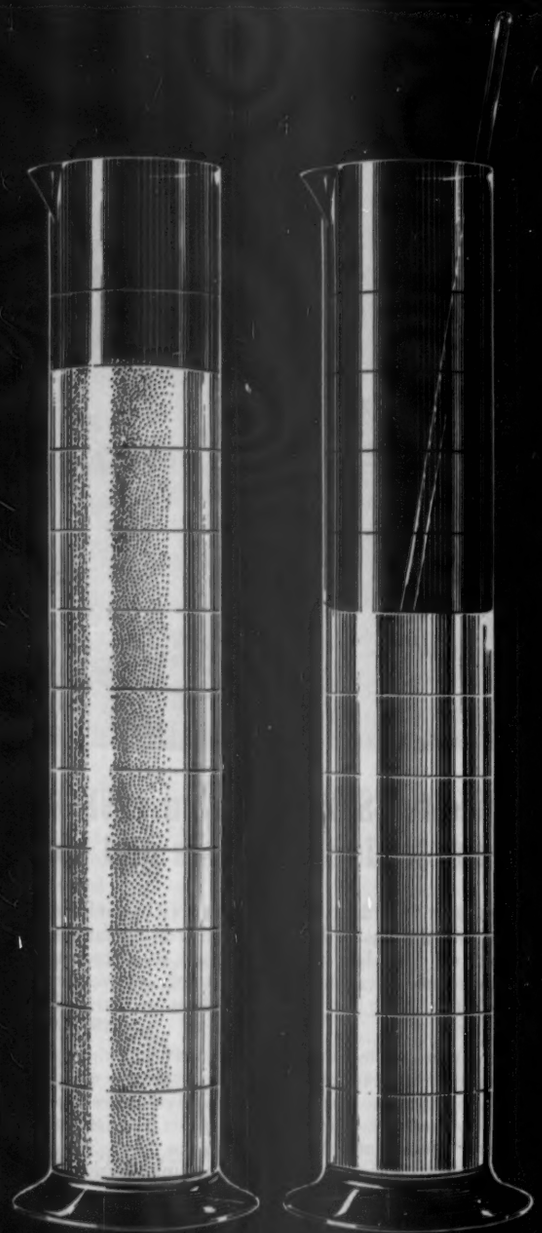
The design and manufacturing requirements that go into SS-850 are typical of the care that Link-Belt gives to every detail of every chain. And, because Link-Belt builds a complete line, you're sure to get the one best-suited to your exact requirements. Ask your Link-Belt representative or distributor for all the facts on Link-Belt chain and sprockets for pulp and paper mill service.

LINK-BELT

CHAINS and SPROCKETS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13.554

YOU CAN "SHRINK" SODA ASH TO SAVE SPACE...CUT COSTS



In many of the chemical process industries, wet storage of soda ash provides a means of reducing storage space and increasing handling efficiency. In slurry form, soda ash occupies 30% less space than an equal weight of the dry material. Conversely, it is possible to store over 40% more soda ash as a slurry in the same volume now required for dry storage. In addition, the wet systems permit greater ease of handling and substantial savings in installation and processing costs.

A number of manufacturers using soda ash in their operations are taking advantage of the cost reductions realized through slurry storage. In many cases, helpful information and assistance has been provided by Mathieson—one of the pioneers in the development of wet soda ash storage systems. Mathieson's technical service staff, with years of practical experience in the handling and use of soda ash, is available for consultation with your engineering department. A call to your Mathieson representative is all that's needed.

caustic soda · soda ash · chlorine
sulphur · sulphuric acid · bicarbonate of soda · ammonia · sodium nitrate · nitric acid · hydrazine products · sodium methylate · sodium chlorite · hypochlorite products
dry ice and carbonic gas · ethylene glycols and oxide · methanol

MATHIESON

MATHIESON CHEMICAL CORPORATION
Mathieson Industrial Chemicals Division
Baltimore 3, Maryland

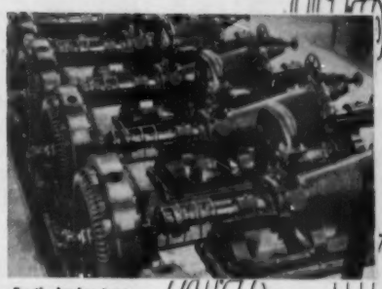
2044

See why
FAST'S Couplings
are your wisest buy

LESS DOWN-TIME. Industry finds that Fast's Couplings, the original gear type coupling, give trouble-free performance. They save on maintenance. Save money (often thousands of dollars in production losses) year in, year out, because there is no down-time due to breakage . . . no expense of replacing perishable parts.

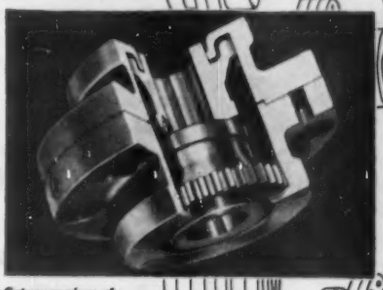
LOWEST COST PER YEAR because Fast's Couplings usually outlast the equipment they connect. Many Fast's Couplings are still in use after 30 years. Why? Because they are ruggedly constructed of the sturdiest, most practical materials . . . all steel in construction, unique in design.

FREE ENGINEERING SERVICE. The same "Know-how" that goes into the manufacture of famous Fast's Couplings . . . that has resulted in over three-fourths of a million successful installations . . . applies to its extensive engineering service. 35 years of experience in developing the most satisfactory materials and designs, means our staff is well prepared to give you the most effective and cost-saving solutions to your coupling problems. Just outline and send them to Koppers for assistance. And send for free catalog. Just mail the coupon below.



Fast's Jordan-type Coupling in a leading paper mill.

Fast's floating shaft Coupling paper mill installation.



Cutaway view of typical Fast's Coupling. Note unique design.

THE ORIGINAL

FAST'S Couplings

KOPPERS

METAL PRODUCTS DIVISION • KOPPERS COMPANY, INC. • BALTIMORE, MD. This Koppers Division also supplies industry with American Hammered Industrial Piston and Sealing Rings, Koppers Electrostatic Precipitators, Aeromaster Fans and Gas Apparatus.

Engineered Products Sold with *Service*

KOPPERS COMPANY, INC., *Fast's Coupling Dept.,* **278 Scott St., Baltimore 3, Md.**

Gentlemen: Send me a Free, Fast's Catalog giving detailed descriptions, engineering drawings, capacity tables and photographs.

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

SOUTHERN NOTES

HARRY G. TAYLOR has been appointed chief chemist at the Fernandina div. of Rayonier Inc., and *E. P. (BUD) WILSON* has been named assistant chief chemist at the same division according to *FRED B. DOHERTY*, resident manager.

JOE H. BRADY & ASSOCIATES, Southeast distributors for McCulloch Motors chain saws, moved into a new 24,000 sq. ft. building on 3rd and 31st St. (US 78 East), Birmingham, Ala. Mr. Brady is head of the firm and *EDWARD J. ORTH* is business administrator.

CANADA NOTES

BRUCE FALLOWS has been named assistant to the president and general manager of Great Lakes Paper Co., Fort William, Ont., *C. J. WARWICK FOX*. He joined the company last April from Canadian Overseas Paper Co., Montreal.

S. D. FORD, assistant chief engineer, and *PETER VAKOMIES*, project engineer, for Sandwell & Co., Vancouver, B.C., have returned to their head office from Europe. *SVEN QUIST*, development engineer for Sandwell & Co., has been in Sweden assisting in the start up of a coated paper mill for Holmens Bruks, designed by the Canadian company.

ERNEST PILGER (DAD) KETCHUM, first groundwood superintendent of the Powell River Co., died recently in the British Columbia paper town, aged 85. He started his career with the old Willamette Pulp & Paper Co.

CHARLES E. NICHOLS, formerly logging manager of CZ's Puget Sound operations, has transferred from Seattle to Portland, Ore., to assume additional duties in the CZ timber department.

NEW ST. JOE MILL MGR.; BELOIT VETERAN HONORED

W. P. (PAT) SHANNON, Gen. Supt. of St. Joe Paper Co., Port St. Joe, Florida, has been promoted to Production Manager as result of retirement of Earl Hobaugh. St. Joe recently completed an extensive major expansion program.

C. R. (CASH) WHIPPLE (right), veteran Sales Engineer of Beloit Iron Works, was presented a gold watch by chairman E. H. Neese Sr. for 50 years service at a recent staff dinner. Beloit employees have increased from 100 to 1600 in that time. Cash learned drafting by correspondence to get his start. A Sales Rep. since 1926, he made his first call at Cloquet, Minn., once flew in a Cessna with his son to the Pacific Northwest for mill calls.

FORM NEW PARTNERSHIP

HALVAR LUNDBERG (left), of Seattle, and TORE AHLEN, of Vancouver, B.C., form Pacific Coast partnership. Mr. Lundberg arrived in Seattle in 1927, from East Canada where he spent 6 years in mills. Mr. Ahlen arrived in Seattle in 1937 but since 1944 has been in Quebec.

Continued on page 18

COATED
LEDGER
INDEX
NOTE
TABLET
OFFSET
NOTION BAG

FOLDER
ONION SKIN
OYSTER PAIL
DRAWING
SAFETY

INSULATING
NOVEL
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CLINTON

STANDARDIZED

STARCHES

FOR USE IN THE MAKING OF HIGH-GRADE PAPERS AND BOARDS

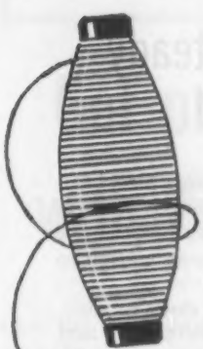
CLINTON FOODS INC.
Corn Processing Division
CLINTON, IOWA

Portrait of Progress

FIRST INSTALLATION OF A SPECIALLY-ENGINEERED SPINNING FRAME AT THE LOCKPORT FELT COMPANY

A NEW DEVELOPMENT IN FELT MAKING

another "TENAX PLUS"



A long-standing Lockport Felt Company policy directs that whenever possible **every** component of **every** TENAX FELT be produced in the Lockport plant. From sorting the raw wool to the completion of the finished felt, wool felts are ALL-LOCKPORT . . . QUALITY-CONTROLLED in every step of their manufacture.

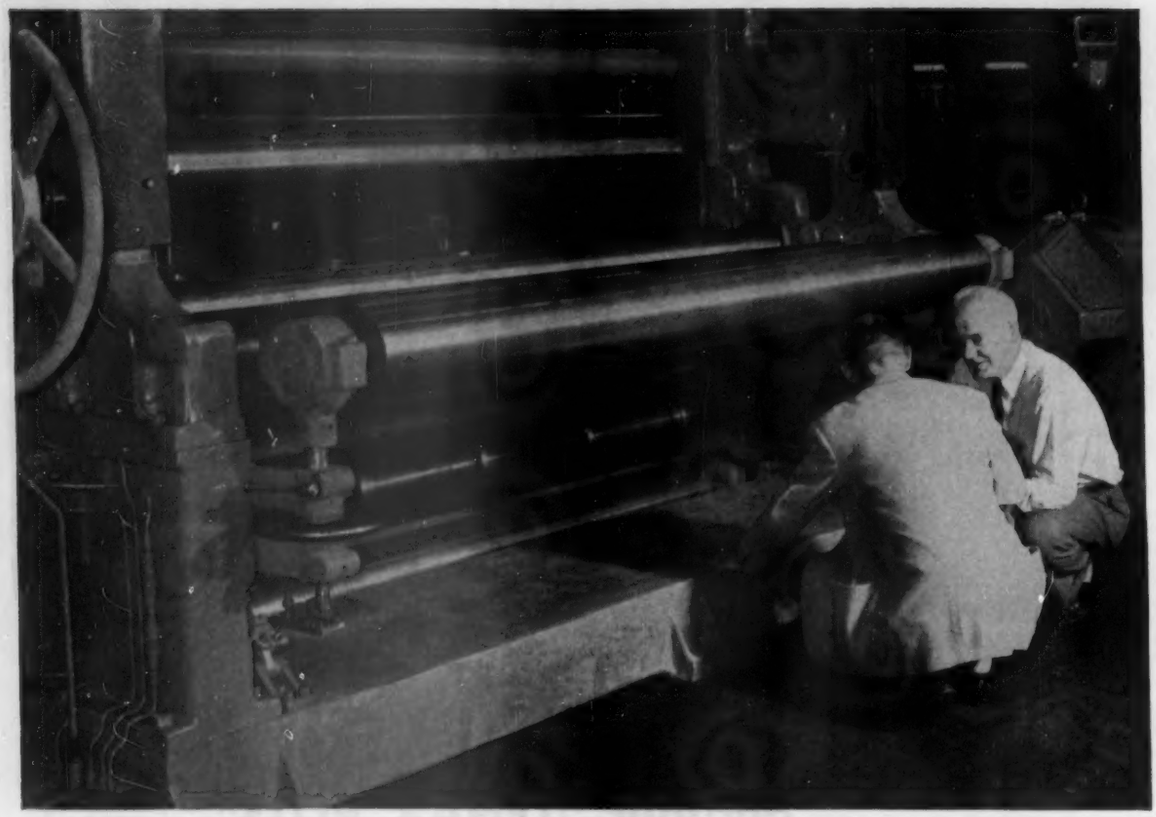
Now, this rigid control of quality is applied to the production of **worsted yarn.** More than two years of research and planning . . . by Lockport technical experts collaborating with the Research Division of the Whitin Machine Works . . . resulted in the development of the Worsted Spinning Frame shown above. This new Spinning Frame, together with other machines shown for the **first time** at the Textile Machinery Show in Atlantic City on April 26th, had been in operation at Lockport since early 1954. This is the first application to the production of paper-makers felts.

Let your Lockport Felt Company representative show you why TENAX FELTS . . . made by the **only** felt-manufacturer with facilities to produce **both** woolen and worsted yarns . . . can serve you better.

LOCKPORT FELT CO.

NEWFANE, NEW YORK

TENAX FELTS



Why **Langston Slitters & Winders** hold steady with a 3-ton roll whirling at full speed

V-Belt Drives to the Rider Roll and Winding Drums. Far more efficient than flat belts for a given cross-section size. Belts need no lubrication, give smooth drive, run quietly.

The massive bedplate and side frames on this Langston Model DA are important reasons why Langston Slitters & Winders work so well and last so long. Every Langston machine has a bedplate and side frames which, like this one, are more than husky enough to hold the machine steady under full load.

This extra sturdiness makes Langston machines easier to align, and insures that they will remain steady through a long life of hard use. With the weights these machines carry, it doesn't pay to risk unsteadiness—even at *moderate* speeds. If you plan to operate your winders at *high* speeds, you need all the sturdiness Langston construction gives you.

Clean-cutting Langston Slitters & Winders use shear-cut slitters throughout the line—standard equipment without special order or extra cost. V-belt drives to the rider roll and between winding drums with variable pitch sheave permit easy adjustment of speed to suit grade of paper, or roll density required.

Langston Slitters & Winders are available in four standard models, in sizes from 40 to 196 inches and speeds to meet your specifications. These machines are now being produced at an accelerated rate, but the demand is exceptional. Prevent disappointment by planning ahead and placing your order early. For full information, write Samuel M. Langston Co., Camden 4, N.J.

LANGSTON *Leadership...by design*

Get protection plus for your gear drives with GULF E.P. LUBRICANTS

Get the advantage of the extra load-carrying capacity of Gulf E.P. Lubricants, plus excellent water separating and rust preventive properties, plus exceptional stability for this type of lubricant, plus nonfoaming and non-corrosive characteristics.

This "plus protection" of Gulf E.P. Lubricants not only prevents excessive gear wear but insures freedom from rust, foaming, and other lubrication troubles.

The next time you order gear drive lubricants, make it an order for safe, sure protection and lower maintenance costs — specify Gulf E.P. Lubricants.

For more complete information, or for expert help on your gear drive lubrication problems, send the coupon.

GULF SERVES INDUSTRY

Gulf Oil Corporation · Gulf Refining Company
1822 Gulf Building, Pittsburgh 30, Pa.

Gentlemen:

I would like further information PP on Gulf E.P. Lubricants:

- ☐ Please have a Gulf Sales Engineer call.
- ☐ Please send me a copy of your pamphlet "Gulf E.P. Lubricants for Reduction Gear Drives."
- ☐ Please arrange to show a group in our plant the new Gulf Color Slide Film, "Gears and Their Lubrication."

Name_____

Company_____

Title_____

Address_____

PACIFIC COAST NOTES

New Bulkley-Dunton Men at Pasadena Office

C. P. RYAN and *D. ADLER* are now in charge of Pasadena, Calif., office of Bulkley, Dunton Processes Inc. (Room 231, Security Bldg., 234 E. Colorado). B-D Processes specializes in custom built water purifications systems. Robert A. Baum and Geo. E. Hurst are no longer connected with the firm.

G. A. BLOMBERG, retiring as asst. treasurer of Simpson Logging Co., and comptroller and office mgr. of its Everett Pulp & Paper Division, received a gold watch band, binoculars and symphony records at a dinner for him. *ROY HOLLAND* of Rayonier made a recent trip to Rayonier's operations on the Southeastern U.S. Coast.

DON LAWSON, whose move from Port Angeles to be new assistant manager of Rayonier's Florida mill was announced here in April, drove to the Olympic Peninsula and all the way back to Florida to transport his wife and their five children to their new home in the South.

FIBREBOARD'S Soleduck Logging Division on Olympic Peninsula was written up in the company magazine, mentioning *NELSON HARTNAGEL*, manager (also assistant mill manager), *PETE PEARSON*, logging supt., *EMIL HILL*, camp foreman and high rigger, *NEWT JERNIGAN*, master mechanic, *RAY HELGESON*, logging engineer, *JOE HUGHES*, in charge of booms, *KENNY GARRETT*, office manager, *HAROLD DODGE*, accountant, and *MARGE KLAHN* and *RUTH KNORR*, assistants.

PROMOTED IN CROWN Z

RALPH D. DICKEY (left), appointed new Resident Mgr., Seattle headquarters in Northwestwest Washington for Crown Zellerbach Corp., and KENNETH C. OSIER (right), new President of International Pulpwood Supply Co., Seattle, and I. P. Supply Ltd., Vancouver, B.C. They divided responsibilities held by late OAKLEY DEXTER, for Asst. Vice Pres. of Crown Z. Mr. Dickey, with CZ since 1917, had been Pacific Northwest Sales Mgr., based in Portland, Ore., and Mr. Osier joined CZ 9 years ago as Timber Buyer at Port Angeles Mill and has been Head Timber Buyer for Seattle area. Pictures by Martha Laakso of Seattle CZ office.

CUSTOM Fabricators

TRAINED PERSONNEL...
MODERN FACILITIES...
Specializing in:
Stainless Steel Products
Stainless Steel Tubing
Stainless Steel Valves
Stock Valves
Stainless Steel Fabrication
Stainless Steel Fittings
Stainless Steel Pipe
Copper Smithing
Lead Linings
Lead Burning

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COPPER WORKS, Inc.
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Telephone MUrdock 2191

FIRST WOMAN WINNER OF A BOLTON PRIZE

FOR FIRST TIME in history of the Bolton essay contests, a woman won a prize. Here are B. S. SPAULDING (left), of Portland, Ore., Pacific Northwest rep. for John W. Bolton & Sons; MRS. JULIA BOSTON, of Crown Z Camas mill, who won Pacific Coast division top honors in Bolton contest, and G. W. CHARTERS, Asst. Res. Mgr., Camas, congratulating her. Mother of 4 children, she is Secy. to R. E. Lawton, Supervisor of Ind. and Community Relations at Camas.

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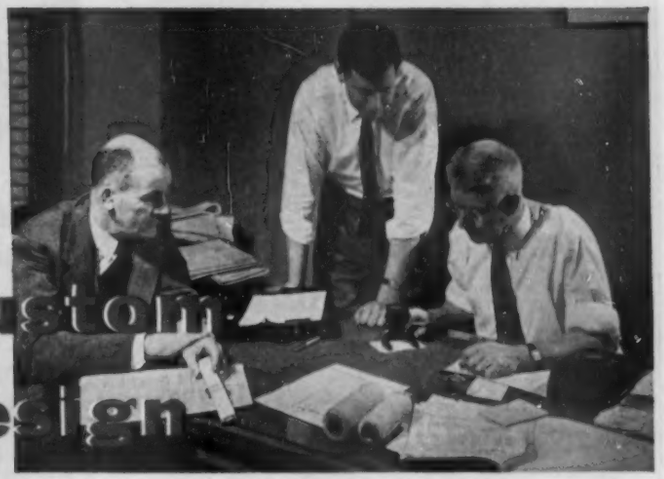
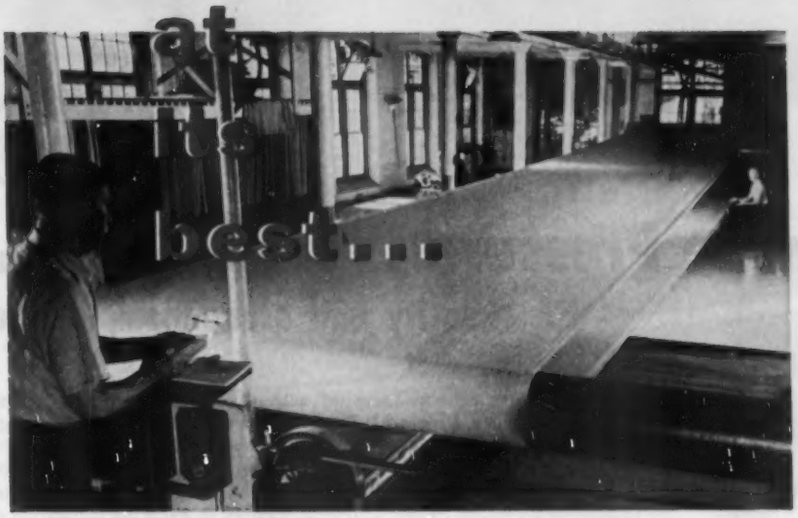
Teamwork...



from Mill check-up to finished felt.



KENWOOD TEXTILE PRODUCTS

HUYCK FELTS

first in quality... first in service

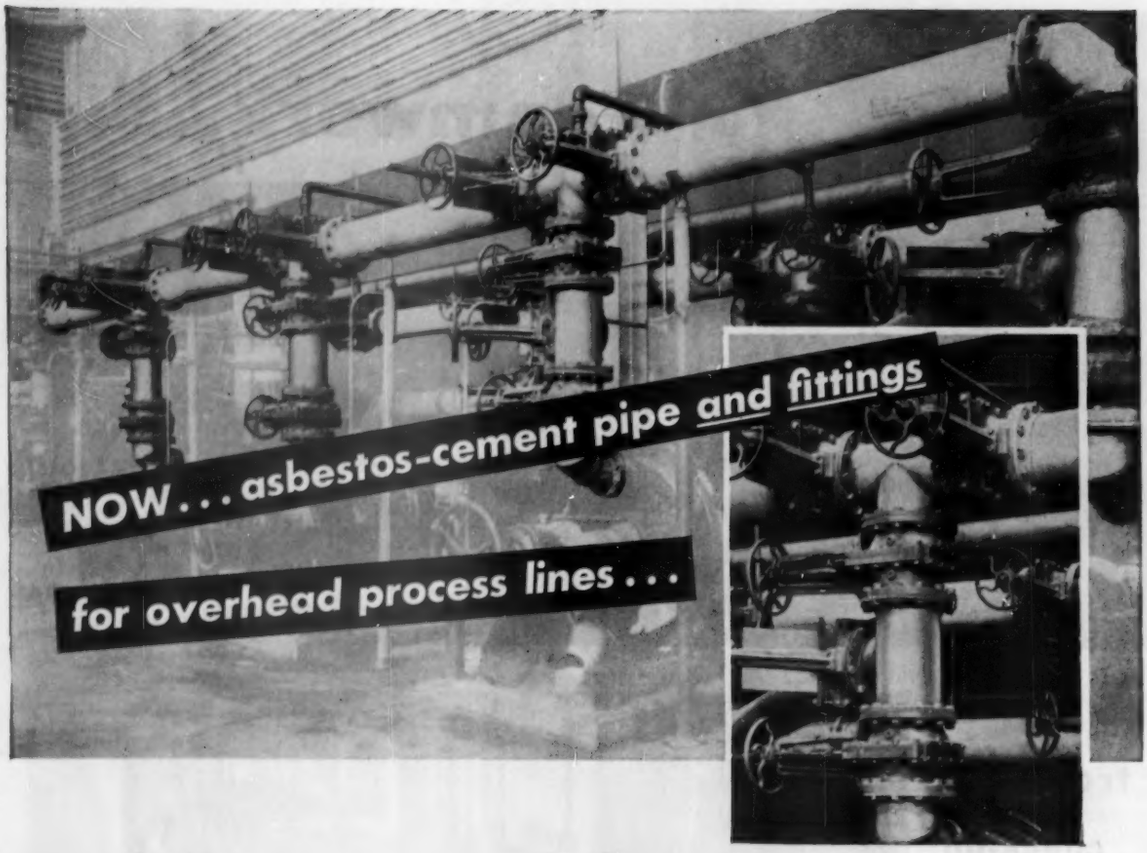
F. C. HUYCK & SONS

Established 1870 · Rensselaer, N. Y.

The Huyck custom design operation is sparked by a Huyck field serviceman. Experienced and capable, he works with you on your felt requirements, then transmits this exact information to the Huyck designers.

Nine designers analyze all the requisites for each felt Huyck makes for you. Every element of its construction is tailored exactly to the specifications which will suit your machine precisely — to provide maximum efficiency at lowest cost per ton.

Consider service carefully when you buy felts: it must always be complete and dependable. As the Huyck service record proves, Huyck felts — with Huyck service — mean better production and lower costs for you.



Transite Pressure Pipe provides high carrying capacity and economical, efficient service...

YOU can now obtain Transite* asbestos-cement Pressure Pipe with Transite-lined Streed Fittings for your overhead process systems. This permits the installation of high strength non-metallic pipe for handling raw and treated water, washed and unwashed pulps, stocks of all kinds, multi-stage bleaching systems (except direct chlorination) and certain mill wastes. There is no better way to provide clean pulp and stock than by handling it through Transite Pressure Pipe.

Low installation costs—Transite is light in weight, easy to handle, and can be drilled, cut, threaded and machined with standard tools. *And*, because its carrying capacity stays high, you can specify the smallest diameter pipe necessary . . . thus making the minimum capital investment.

Low pumping costs—Transite Pressure Pipe offers exceptionally low frictional resistance to the flow of liquids (flow coefficient C=140 for water). Since it is resistant to sliming and bacterial growths, this high carrying capacity is continuously maintained so that pumps can be operated at maximum efficiency and lowest cost.

Low maintenance costs—Transite cannot rust and is highly resistant to the corrosive action of mild acids and alkalies. Consequently, it requires a minimum of maintenance throughout its long life.

For underground service too, such as water supply or fire lines, Transite Pressure Pipe offers the same outstanding advantages. To obtain further information on Transite Pipe Systems for paper mills, write Johns-Manville, Box 60, New York 16, N. Y.

*Reg. U. S. Pat. Off.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville TRANSITE PRESSURE PIPE

value in a fine product

reflects the experience and skills of its makers.

value in Fourdrinier wires is a matter of record ... paper quality and production records in mills throughout America reflect the fact that Appleton Wires are Good Wires!

APPLETON WIRE WORKS, INC., APPLETON, WISCONSIN

PULP & PAPER PERSONALS — Continued

PACIFIC COAST NOTES

L. F. MAYBACH, CZ project engineer at Camas, replaces F. W. *FLYNN*, as dean of the Crown Zellerbach paper school. T. W. *LEEDHAM, JR.*, division industrial engineer, was named principal. Mr. *Flynn recently transferred to Port* Townsend as assistant resident manager.

B. F. BROWN, JR., with Fibreboard Products, Inc., since 1939, has been transferred from its Vernon, Calif., plant, to its Stockton, Calif., plant, as assistant plant manager. Mr. Brown held this same position at Vernon.

E. E. OLFSON, employee of Fibreboard since 1931, who was assistant plant manager, Stockton, is replacing Mr. Brown as assistant resident manager at the Vernon Division.

Drying Paper Faster

Drying efficiency depends upon the ability of the dryer felt to take up water and to get rid of water—*the drying rate of the felt itself.*

Barrell Tour Boss L. D. Felts have a fast absorbing surface ply and fast vapor-eliminating surface—a double surface fabric with high capillary power. Note the close texture face surface above in contrast to the open weave back which offers approximately 30% greater evaporation area. The felt absorbs water faster—gets rid of water faster—improves paper-drying rate.

BARRELL TWO-PLY COTTON DRYER FELTS

Siamese • Tour Boss
L. D. Constructions
By Lawrence Duck Co.
Lawrence, Massachusetts

BAR-L DRYER FELTS

WILLIAM L. BARRELL CO.
52 Chauncy St., Boston, Massachusetts

GEORGE J. LOCKBAUM has been appointed paper mill superintendent at Scott Paper Co.'s Everett, Wash., plant. He will supervise all paper machines—two this year and two more machines to be completed during 1955.

ALVIN C. KLOTZ, formerly with *MILLER FREEMAN PUBLICATIONS*, has been named manager of a new field office at Tacoma, Wash., for American Forest Products Industries, Inc.

BYRON BANCKE has been promoted to assistant superintendent of wood mill and river operations at CZ Camas plant.

EARL STONE, Idaho-born machinetender at Fibreboard's Port Angeles mill, and an inveterate salmon fisherman, was unhappy because he was talked into throwing his first 1954 salmon back, even though it was fair sized.

DAN McMAHON, machine room foreman, received a service award for 40 years, and *CLARENCE ENGHOUSE*, assistant manager, was one of the 30 year award winners, at West Linn Division of Crown Zellerbach.

JACK R. KELSALL has been appointed Pacific Northwest Industrial Rep for Brea Chemicals, Inc., to introduce new Brea Aqua ammonia to industry.

PETERSON NOW EXEC. V.P.; *OTHER BLACK-CLAWSON MOVES*

THREE BLACK-CLAWSON *executives figured in recent news from that company.*

FRANK T. PETERSON (left), **has been** *appointed Executive Vice Pres. and Chairman of* a new Executive Policy Committee for Black-Clawson-Dilts-Shartle-BC *International divisions. A Syracuse U. graduate with extensive* papermaking background, his office is 230 *Park Ave., New York. He started with Dilts in 1947 and has spearheaded Black-Clawson* expansion in Europe and Latin America.

ROBERT R. CRAWFORD (middle), son of President Cliff Crawford of Black-Clawson, *has been appointed Gen. Mgr. of B-C International Ltd., with offices at Black-Clawson* House, 23-A Maddox St., London, Eng. He *has worked in sales, engineering and other departments of Shartle Division and helped set up a new production system there and in the London subsidiary, where Shartle equipment is made.*

ROBERT F. VOKES (right), *elected a new Vice Pres. of B-C, is General Mgr. of the Dilts Division, Fulton, N.Y. Born in Auburn, N.Y., he graduated from Syracuse in 1938, immediately joining Dilts.*

IS YOUR MILL

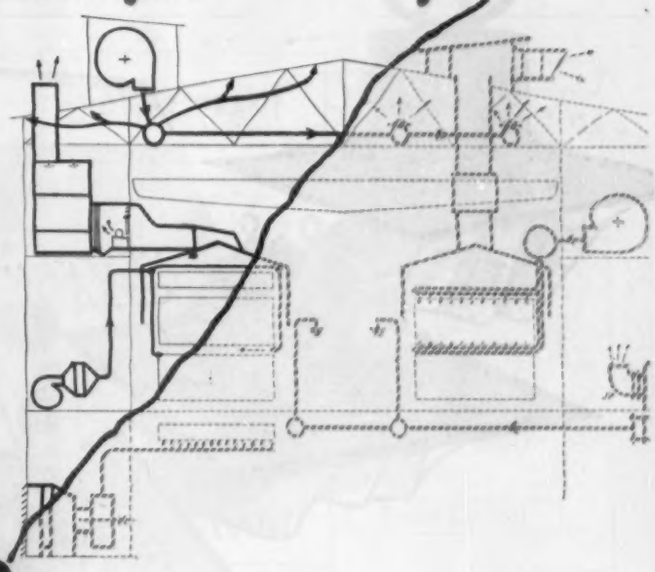
Just Limping Along

WITH ONLY

1/2

OF AN

AIR SYSTEM?



(Over 30% of the Industry's Mills Are!)

It could prove profitable for you to contact J. O. ROSS ENGINEERING CORPORATION and have an experienced engineer survey your mill to determine if the AIR SYSTEM is consistent with current production. Nowhere in the mill can you spend money with greater return than for AIR applications.

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Quick Service

to the PULP & PAPER industry

WESTERN GEAR WORKS offer a lot of specialized gear engineering skills to the Pulp and Paper industry. We design, build, test and produce in quantity a wide range of gear equipment; transmissions, paper machinery drives, high speed units, speed reducers, gears and special transmission parts.

May we serve you?

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High Speed Gear Units	No. 5204
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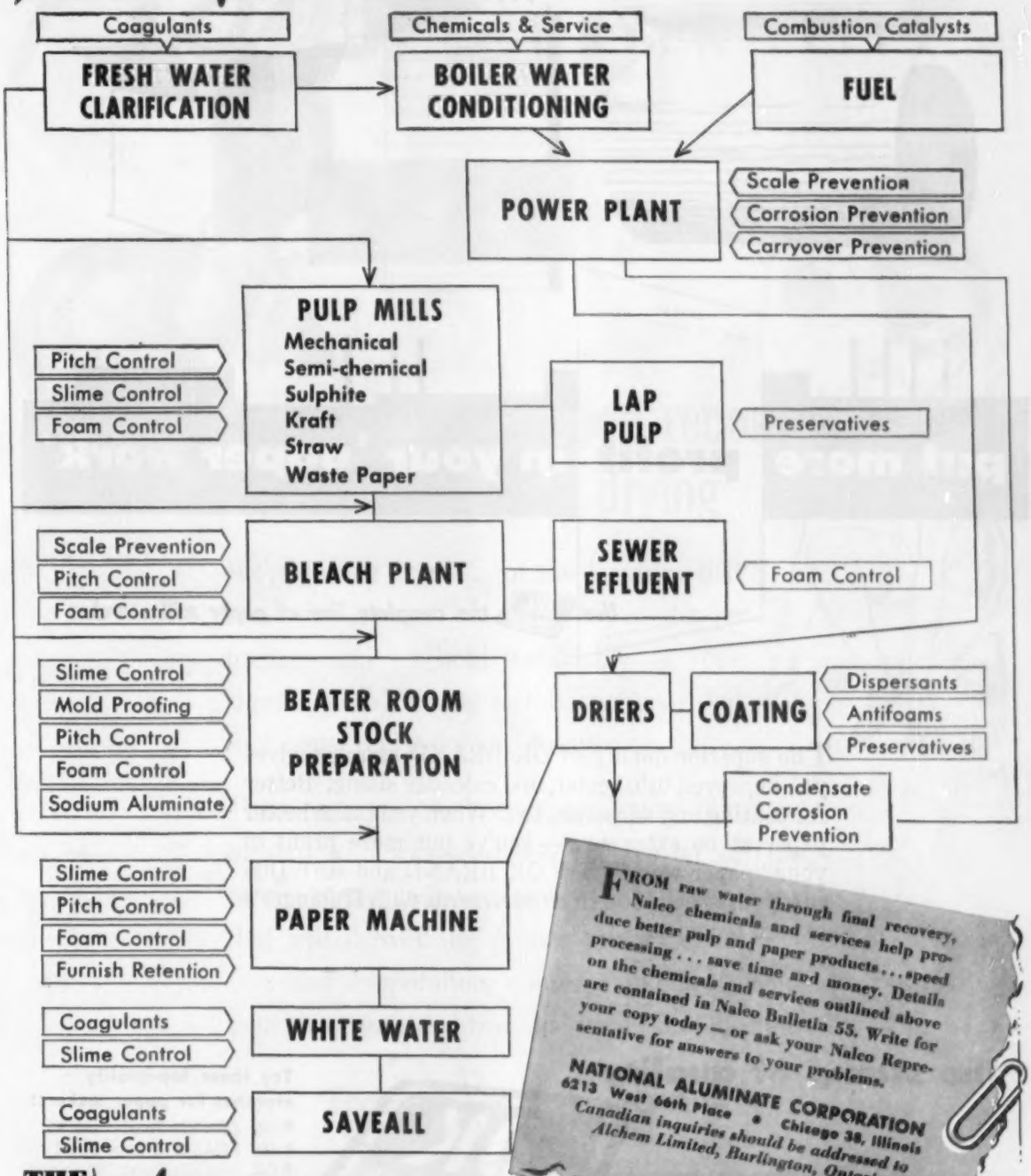

FROM raw water through final recovery, Nalco chemicals and services help produce better pulp and paper products . . . speed processing . . . save time and money. Details on the chemicals and services outlined above are contained in Nalco Bulletin 55. Write for your copy today — or ask your Nalco Representative for answers to your problems.

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THE Nalco SYSTEM • Serving the Paper Industry through Practical Applied Science

The superior quality of OK BRAND starches gives you improved tub, beater, and calender sizing. Better for coating and adhesives, too. When you make better paper at no extra cost — you've put more profit in your "paper work". Try OK BRAND and see! Discuss your special starch requirements with Hubinger's expert technicians.

the stamp of quality

ESTABLISHED IN 1881
THE HUBINGER COMPANY
KEOKUK, IOWA

New York • Chicago • Los Angeles • Boston • Charlotte

OK BRAND

Try these top-quality starches for paper makers:

- OK BRAND Pearl
- OK BRAND E-Type Pearl
- OK BRAND Pearl 700
- OK BRAND Pre-Jel
- OK BRAND Thin Boiling Starch
- OK BRAND Oxidized Starches

Asten DRYER FELTS

Breaking your speed record calls for superior drying

We're telling you?... of the troubles that beset the dry end when you try to step-up tonnage and yet hold the quality of your sheet... of defeating factors such as rising fuel costs, replacements, downtime.

There is a way to keep your drying efficiency in step with increased speed. Have an ASTEN representative help you specify the right felt—one that will deliver the proper balance of absorption and evaporation, conserve the heat, hold your sheet snug and true, and itself stand the gaff.

Economy in the long run

ASTEN-HILL MFG. CO.
PHILADELPHIA, PENNA.

ASTEN-HILL LIMITED
VALLEYFIELD, QUEBEC

COMPARE these Advantages . . .

1.....LONGER WIRE LIFE

2.....LESS DOWN TIME

3.....FASTER WIRE CHANGE

4.....BETTER WATER REMOVAL

THE MANCHESTER CANTILEVER TYPE SUCTION COUCH ROLL gives you these important advantages because it is engineered to meet your special requirements. Our engineers will recommend how to get more efficient water removal with the right suction box area and properly applied vacuum equipment.

A correct diameter couch roll provides more surface contact area, more uniform wire tension, and less friction between couch roll surface and wire. Result: longer wire life and reduced costly down time.

With Manchester's cantilever support, you can slip the wire loop over the couch roll, start it properly, and string the wire faster.

All these important features mean more production, greater profit for you. Write us for additional information.

OTHER PRODUCTS: Winders • Adjustable Shake Motion • Pope Type Reels • Paper Machine Drives • Size Presses • Rubber-Covered Drilled Suction Press Rolls • Drilled Suction Drum Rolls • Drilled Suction Couch Rolls • Cylinder Moulds • Smoothing Presses • Complete Fourdriniers

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6 PLANTS NOW SETTING NEW STANDARDS FOR PULP BLEACHING...

...with **SOLVAY®** **Chlorine Dioxide Bleaching System**

- **New! Higher Brightness with No Loss in Strength**
- **New! Cleaner Product**
- **New! Greater Yield—Increased Production**
- **New! Control of Viscosity**

A NEW HIGH IN QUALITY—SOLVAY now makes it possible to achieve new standards of quality, dependability and color permanency. A color brightness from G.E. 88 to 94 is being obtained regularly with paper-making grades of kraft and sulphite pulp—*without loss of strength!* The pulp is cleaner with a virtual elimination of wood dirt and a corresponding reduction in shives. In addition, this process supplies the high quality and control of viscosity which are so important in the dissolving grades of paper.

SUCCESSFULLY PROVEN IN 6 OPERATING PLANTS Over 2000 tons of pulp are now bleached daily. The total output is expected to exceed 2600 tons daily upon the completion of two additional plants this year.

CAN BE USED ON DIFFERENT GRADES OF PULP At present, three grades of paper-making pulp—kraft, sulphite and neutral sulphite semi-chemical—are being bleached. In addition, dissolving grades of pulp (both prehydrolysis kraft and sulphite) for the production of synthetic fibres and cellophane are now in regular production.

FURTHER INFORMATION—If you would like additional data regarding the application of this process to a specific phase in your operations write us in confidence, giving full details. SOLVAY's Technical Service is available at no cost during design stages, start-up and training periods.

The SOLVAY chlorine dioxide bleaching process is operated in a specially developed bleach cell unit designed by Improved Machinery Corporation.

Both the chlorine dioxide manufacturing unit and the flow bleaching process are available on a non-exclusive contract and on a royalty-free basis.

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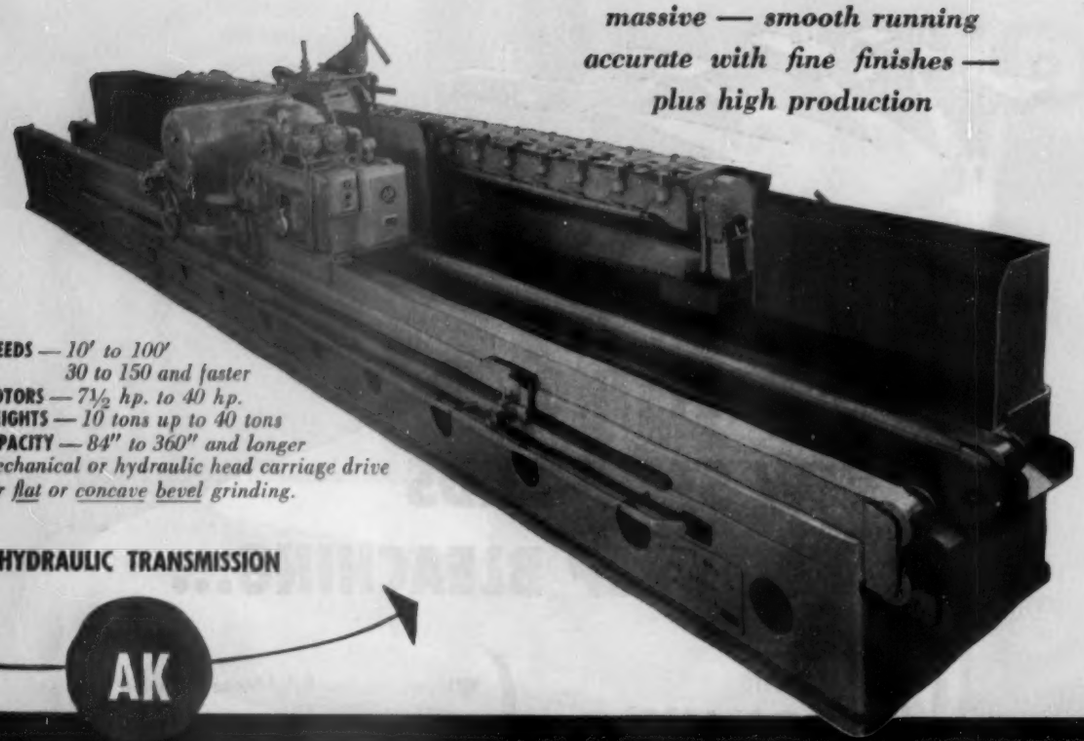
massive — smooth running
accurate with fine finishes —
plus high production



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This pulp grinder operates at high speed for maximum pulp production without any worry about overloading. The team made up of Reliance V★S Drives and electronic regulators protects the grinder from overload yet keeps pulp production at the highest safe level.

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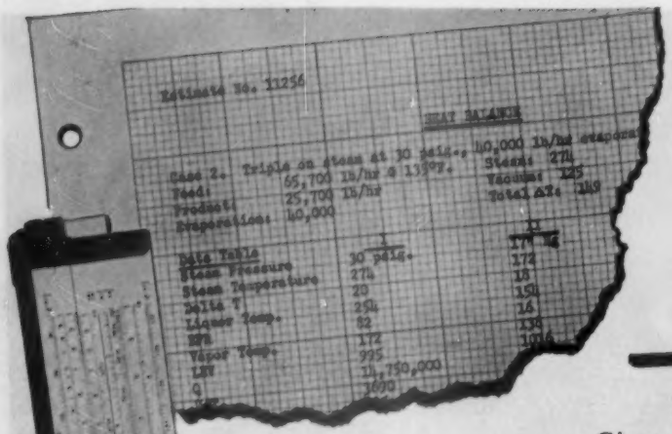

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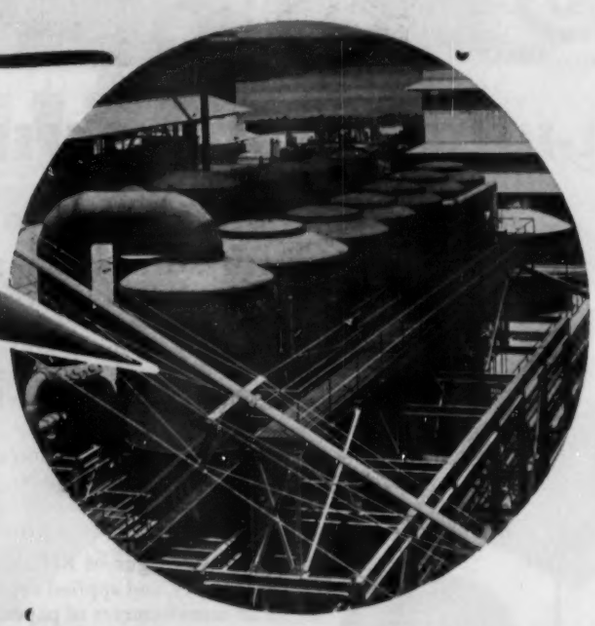

Six body, sextuple effect, long tube, vertical film type Black Liquor evaporator in service at the new Jacksonville, Florida mill of the St. Regis Paper Co.

G-B ENGINEERS are at your service any time to discuss your requirements . . . without cost or obligation.

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WATER COLOR PAINTING BY L. J. A. MEESE

CLOSE TOLERANCES are held in machining operations at Beloit Iron Works. The precision and versatility of this modern planer miller make possible the accurate relationships between various machined surfaces which must be maintained in gear unit cases, press frames, and dryer frames. Shown on the machine is the top housing for a patented Beloit Differential Drive unit.

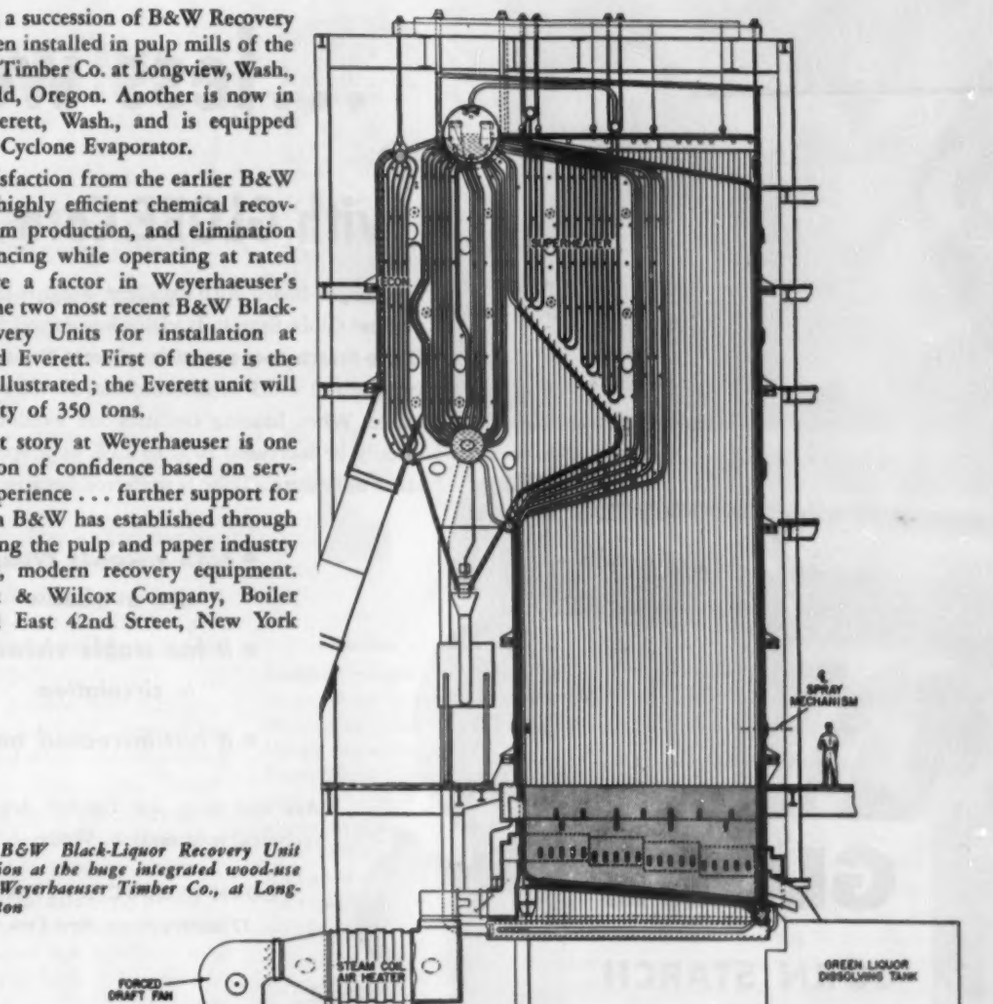
6 B&W RECOVERY UNITS SERVE 3 MILLS OF WEYERHAEUSER

PULP DIVISION

Since 1945, a succession of B&W Recovery Units have been installed in pulp mills of the Weyerhaeuser Timber Co. at Longview, Wash., and Springfield, Oregon. Another is now in service at Everett, Wash., and is equipped with a B&W Cyclone Evaporator.

Service satisfaction from the earlier B&W Units—their highly efficient chemical recovery, high steam production, and elimination of routine lancing while operating at rated capacity—were a factor in Weyerhaeuser's selection of the two most recent B&W Black-Liquor Recovery Units for installation at Longview and Everett. First of these is the 300-ton unit illustrated; the Everett unit will have a capacity of 350 tons.

This repeat story at Weyerhaeuser is one more indication of confidence based on service-proved experience . . . further support for the reputation B&W has established through years of serving the pulp and paper industry with efficient, modern recovery equipment. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.



New 300-ton B&W Black-Liquor Recovery Unit now in operation at the huge integrated wood-use center of the Weyerhaeuser Timber Co., at Longview, Washington

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A stronger board with excellent bond is produced when you use Globe Starch. It yields low spread figures because Globe Starch does not stick to metal, the adhesive can be run the full width of the medium, thereby reducing trim waste. When heating facilities are available, speed can usually be increased 10% to 20% over speeds used with other adhesives. Globe is preferred because...

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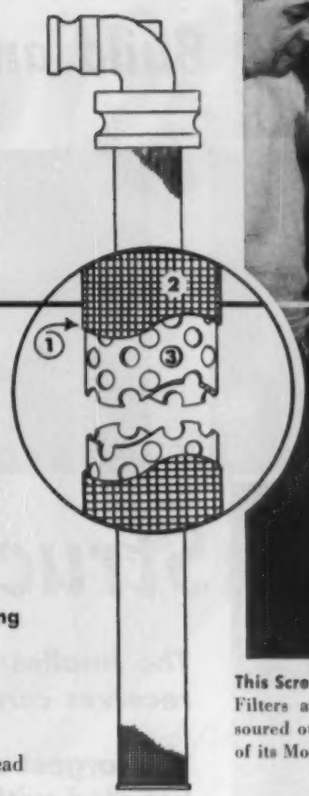
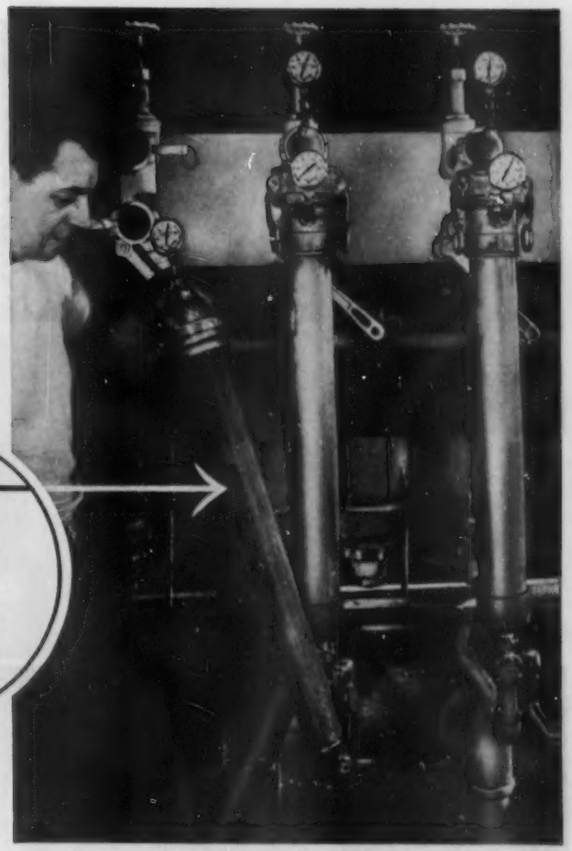


Important Features of the Ronningen Screening Element

1. **Direction of flow is inward**
2. **Corrosion-resisting Monel screen, welded at both ends**
3. **Perforated Monel inner backing**



This Screening Element from one of the 35 Ronningen-Petter Fluid Filters at Allied Paper Mills, Kalamazoo, Mich., has just been soured out with dilute muriatic acid. Note the excellent condition of its Monel mesh.

Fluid filters handling white water lead a hard life. And often a short one.

There's no denying, of course, that white water is *corrosive*. Or that grit, forced through the screen under pressure, is *wearing*.

You can't prevent this corrosion. You can't stop this wear. But you can do the next best thing — *slow 'em both down!*

The way to do it effectively is by using Monel® screens and perforated Monel backing in your fluid filters.

Monel resists corrosion and pitting by paper stocks and white waters. It can be safely soured out in dilute solutions of muriatic acid.

Monel is tough, too. It withstands wear and abrasion caused by particles forced against the mesh at pressures up to 150 pounds. Screens don't clog. Perforations remain smooth. With Monel helping out, you can see why your filters not only last longer and require less maintenance, but why they also *work* better.

Another advantage: Monel presents no problems to the experienced fabricator. For example, the fine mesh Monel screening of the Ronningen-Petter Fluid Filter illustrated on this page, is welded. No internal gaskets needed at either end. No end leaks possible because of poor-fitting gaskets. And as Monel is easily silver soldered, the replacement of mesh is a relatively simple job.

The Ronningen Fluid Filter removes dirt, scale, solids and sand from water, chemicals, oils, and other liquids — hot or cold. Use it for the prevention of plugging in shower nozzles and foam killer sprays . . . for the protection of valves, pumps, meters and other equipment . . . for raw water primary filtering and for fine polishing filters.

If you've been having trouble with filters, it will be worth your while to get all the facts. Write the Ronningen-Petter Co., Dept. M, Vicksburg, Michigan, and ask for a descriptive folder. In addition to their own products, by the way, Ronningen-Petter is also a distributor for the Brown-Singer Company, makers of Monel fluid circulating systems, and Monel save-all pans and trays.

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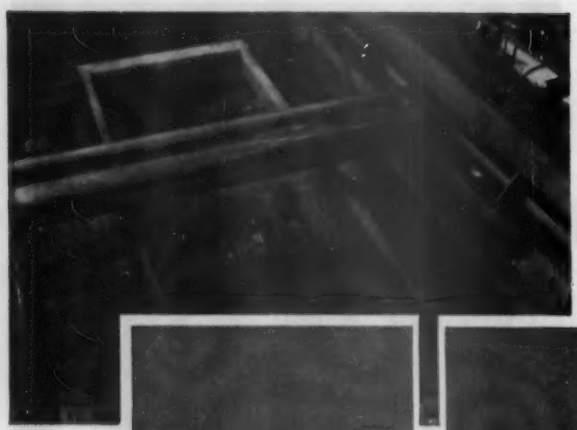
Monel...*for minimum maintenance*



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for **GREATER STAYING POWER**

Bonded directly to the cast iron core with adhesives developed exclusively for this purpose, and with effective bonding surface doubled by micro-threading the core . . . Stowe-Woodward roll coverings *stay put* under the most severe use. Stowe-Woodward's direct bond avoids the bonding failures which result from the stress and strain of extremes of pressure and temperature. It's an important point, because the qualities which make Stowe-Woodward rubber covered rolls outstanding would be valueless if the covers didn't stick.

If this has ever been a problem in your mill, it's time you called in your Stowe-Woodward sales engineer.

S-W INC.

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Craftsmen in rubber

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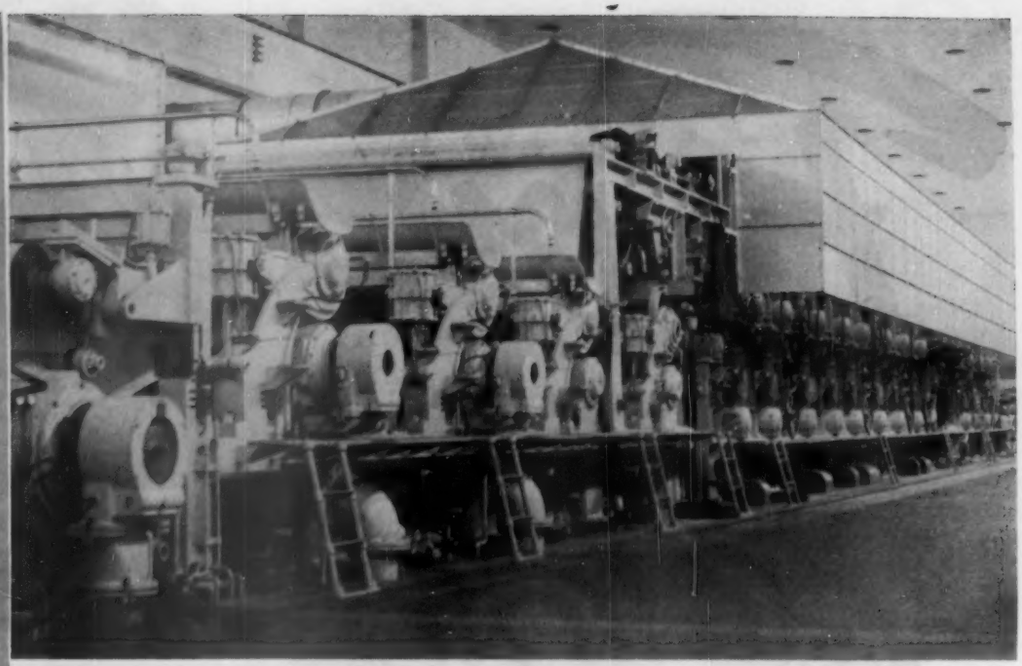

Versatility...

One of the most versatile fourdrinier paper machines ever built, it has produced grades from light weight crepe tissue to heavy multi-wall bag paper. Bagley & Sewall's over a century of experience in designing and building pulp and paper making machinery benefits two ways — experience and ingenuity to design and build to most exacting needs of the mill with successful and productively economic results for management. We invite your consultation with our engineering staff on your pulp and paper making machinery problems or plans — let Bagley & Sewall know-how and versatile engineering serve you.

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Since 1853

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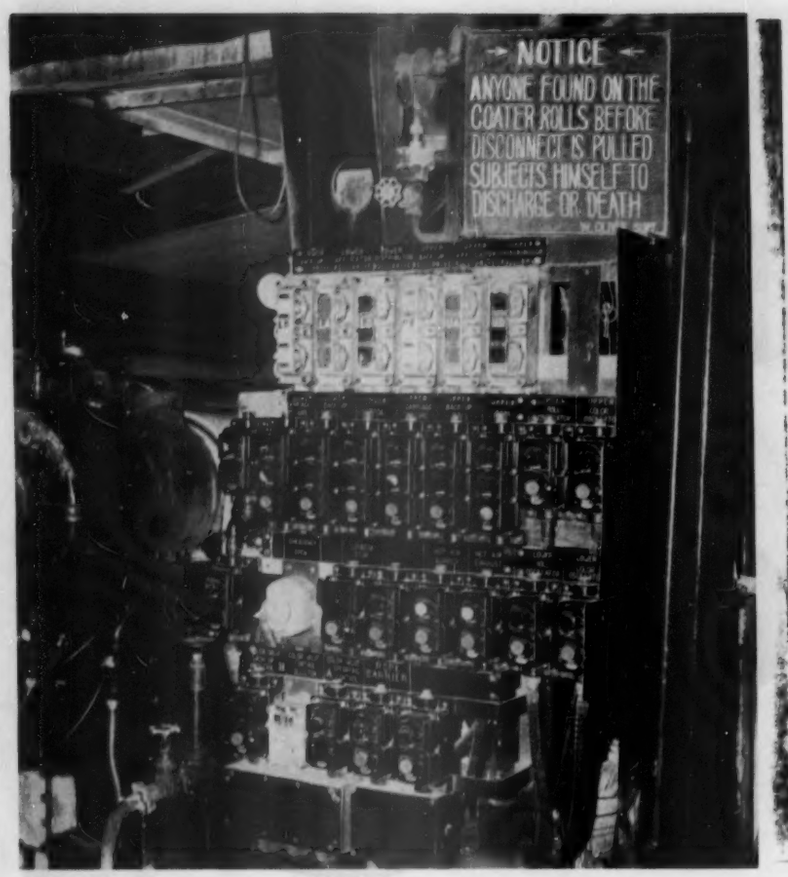


A BUTTON FOR EVERY LITTLE MOVEMENT

BIG COATER ON THE ST. REGIS MACHINE has all the signals for push-button control. This is part of Time's Springdale Laboratories development.

How St. Regis Converted Newsprint Mill to Make Coated Book Paper

IN 1946 THE NEWLY-ACQUIRED mill of St. Regis Paper Co., Bucksport, Maine, was placed under a conversion program which in four years' time converted it from a major producer of newsprint to a major producer of magazine and book grades. Listed in 1946 as the producer of 140,000 tons of newsprint, conversion of the plant began that year and during the next four years was completed to provide capacity for the production of 300 daily tons of machine coated and lightweight grades.

The story of that conversion is still not complete, because before the end of 1954 a new bleach plant will be brought "on line" at Bucksport, which will provide separate bleaching facilities for groundwood and sulfite pulps, thus up-grading the final paper with higher brightness and printability. The new plant, built at a cost of $6,000,000, will double bleaching facilities, and provide capacity for bleaching the entire output of the plant.

Bucksport Background

The Bucksport mill of St. Regis is located on tidewater near the mouth of the Penobscot River. Upstream are mills of Eastern Corp. and Penobscot Chemical Fibre Co., while the Great Northern Paper Co. newsprint domain is located still further north on the Millinocket, a branch of the Penobscot. Wood for the plant is drawn principally from a 75-mile triangle in Southeast Maine and from the islands off the coast (See PULP & PAPER, March 1954, Pulpwood Section).

The original plant was built by the Central Maine Power Co. (part of the Samuel Insull empire) as a modern newsprint mill which began operation as Maine Seaboard Paper Co. in 1930. The design was a conventional one for newsprint manufacture and consisted of a groundwood mill, sulfite mill, centrifugal screens, groundwood and sulfite deckers and decker chests, pulp proportioning meters on the paper machines and a large broke beater.

Machine equipment included two 230-in. Rice Barton Fourdriniers, designed for speeds up to 1450 fpm. Later a 90-in. machine was added for producing groundwood converting papers and wrappers. During the period from 1930 to 1946 this plant was one of the major producers of newsprint in the country, with an output of 104,000 tons of this grade in 1946.

The mill was acquired by Time, Inc. late in 1945 and under the guidance of St. Regis plans were de-

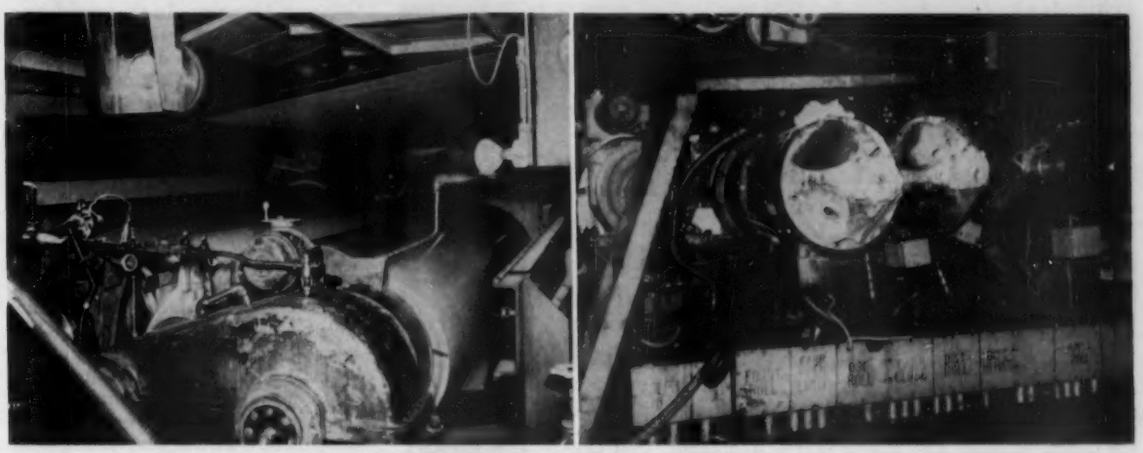
veloped for immediate conversion from newsprint to magazine and book grades. St. Regis eventually took over the plant on its own in 1947, and made it one of the five mills in its Printing, Publication and Converting Paper Division. No. 2 machine in the present plant runs exclusively on *Life* magazine stock and contains an on-machine coater —a development which will be discussed more fully here.

Bucksport fitted well into the St. Regis scheme of expansion, because its acquisition came at a time when the company had successfully pioneered and commercially used peroxide bleaching for groundwood pulp—first at its Norfolk, N.Y., mill, and later at its plants at Deferiet, N.Y., and Sartell, Minn.

Work on the peroxide bleach process began in cooperation with Du Pont and Buffalo Electro-Chemical Co. in 1941. It was such a marked success at Norfolk, that it was decided in converting Bucksport to equip it with a continuous process peroxide bleach plant where mixed groundwood and sulfite would be bleached together. This plant is still successfully in operation, and will continue until it is supplemented by the new bleach plant late in 1954 to make it possible to bleach the two pulps separately.

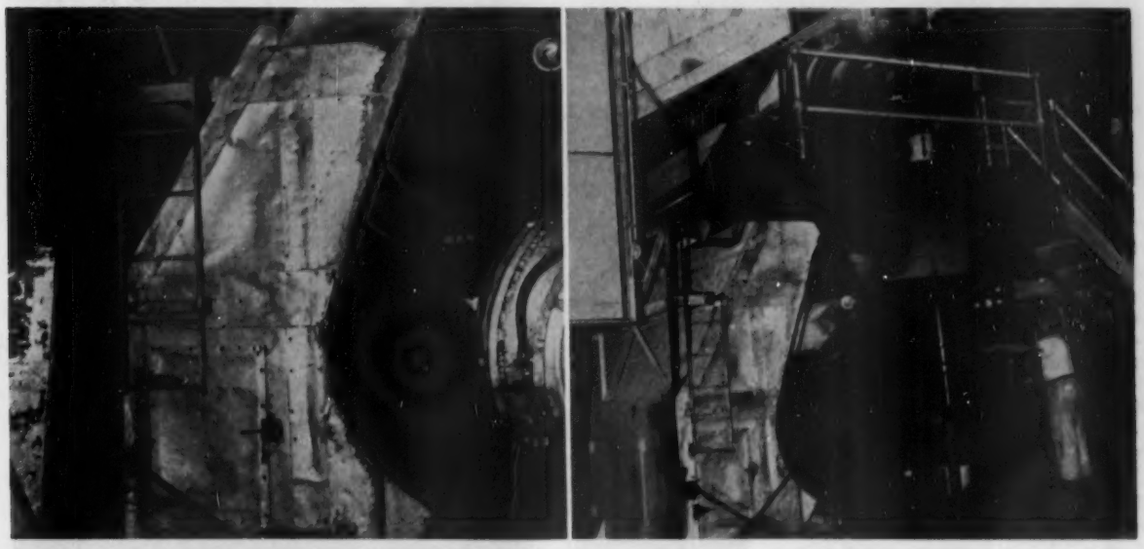
What Changes Had to be Made

In the old newsprint days the pulp mill operated 100% on peeled wood which required washing drums but none for barking. Since it is not possible now to procure all peeled wood, it was necessary to install drum barkers for the new operation. There is one drum barker at the mill itself, and several others



WHERE ON-MACHINE COATING IS DONE ON BUCKSPORT'S NO. 2

LOWER DECK (left) of the big LIFE stock coater at St. Regis mill in Bucksport, with fountain, transfer rolls, applicator rolls and carrying rolls. Harry Faeber, who designed this coater, adapted principles of ink distribution systems from the printing industry. In this picture (an enlargement of which is on front cover) the coating is dropping down on rubber-covered distribution rolls.
DRIVE SIDE of coater (right) shows individually driven distribution rolls.



TWO VIEWS OF PLENUM AS USED IN COATING

(Left) PLENUM AND BACKUP ROLL following coater. Photo shows plenum withdrawn from roll to reveal perforations through which hot air is blown over coated paper web.

(Right) UPPER AND LOWER BACKUP ROLLS following coating. Plenum is in position over coated paper web, and sets coating before it enters the after-dryers from top deck.

GUIDING ST. REGIS OPERATIONS

WILLIAM R. ADAMS (left) is Vice Pres. in charge of Mfg.; FRED D. GOODWILL (second) is Assistant to Mr. Adams. At Bucksport, GEORGE BEARCE (third) is Resident Manager; JAMES H. SNYDER (right) is General Superintendent.

THESE ARE KEY MEN AT ST. REGIS, BUCKSPORT

(Top row, l to r) A. P. DAVIS, Chief Engineer; RICHARD MALLEY, Supercalender Supt.; DAN DANFORTH, Chief Electrician; FLOYD M. CROCKER, Woodlands Mgr.; ED LOWELL, Steam Supt.; TED GROSS, Woodyard Supt. (Second row) F. N. SPRAGUE, Chief Chemist; A. P. GREGORY, Pulp Supt.; ROY STAIRS, Finishing Supt.; HAROLD MOSS, Coating; ALFRED SWENSON, Master Mechanic; CHAS. F. BAKER, Converting.

located at concentration points in the procurement area.

In newsprint pulp the percentage of sulfite was 18 to 20%. Production for *Life* stock requires 45% sulfite to 55% groundwood—or daily wood requirements of approximately 255 cords for sulfite manufacture and 150 cords for groundwood. Need for more chips, therefore, called for replacing the original 4-knife chipper with 10-knife equipment, but keeping the 8-knife chipper in operation.

Capacity of the groundwood plant, naturally, was not increased. It contains 12 Waterous magazine type grinders operating in pairs, each pair being driven by a 3500 hp motor. Five and one-half foot diameter Norton stones are used in these grinders.

The major changes necessary for the conversion, then, consisted of:

1. New acid plant to provide additional sulfite liquor capacity.

2. Bleach plant for continuous bleaching by peroxide process of mixed pulps.

3. Re-vamped digester and pulp preparation equipment.

4. Rebuilt paper machines with on-machine coater added to No. 2.

5. Installation of new supercalendering and finishing equipment.

What Happened with Ammonia Base

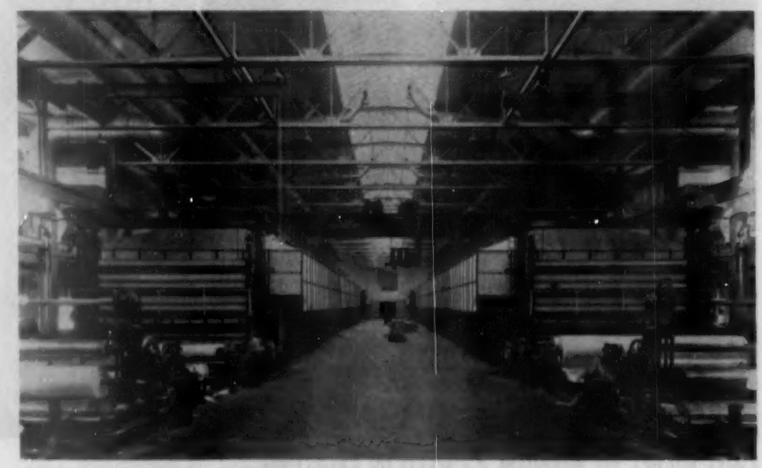
The hot acid cooking and recovery system at Bucksport is the standard Chemipulp Process Inc. installation with single accumulator. Until 1946 No. 4 digester, which was a spare, was used as an accumulator. With increased sulfite capacity, the digester in the conversion went on the line and a hemispherical top and bottom accumulator was built.

With the conversion, also, pond cooling was converted to tower cooling, using the Chemipulp-KC spray type SO_2 gas cooler.

The system was converted from limestone base to ammonia base in 1952. In this system ammonia is taken from tank cars under pressure and diluted with water to form a 25% to 30% solution for storage as aqueous ammonia. In the circulating system, pure ammonia is continually mixed with the dilute as it is pumped to the SO_2 towers. There are two G. D. Jenssen 200-ton acid towers, 95 ft. high and with 9 ft. inner diameter. From the towers the sulfite liquor is pumped to the 100,000 gal. accumulator until ready for use. Water for the acid towers is cooled from 75 to 45° F. in a three-booster barometric type steam vacuum refrigeration unit as supplied by Graham Manufacturing Co., Inc. This unit provides 261 tons of refrigeration and is designed to circulate 250 gpm of chilled water. The unit is provided with automatic controls to maintain the outlet water temperature at the desired required temperature.

The acid plant has complete instrumentation and controls, with Mason-Neilan supplying sulfur melter level control and secondary air control; Brown recorders on secondary cooler, acid towers and for gas and water temperatures; and Fischer Porter Flowrator to measure flow of water to acid towers.

Since the plant went on ammonia



PAPER MACHINES BEFORE CONVERSION

A "BEFORE" VIEW OF THE TWO RICE BARTON MACHINES at Bucksport before conversion. Major change in No. 2, at left, was to break the dryer section in the middle and add coater.

base, operators report better yield, faster cooking time and practical elimination of shives and slivers from raw stock. Estimates of as high as 2% more yield have been made by St. Regis operators. Paper from this pulp has stronger tear and mullen test and higher tensile strength and printing runs seem to show improved printability.

How Pulping and Bleaching were Changed

Increased sulfite needs brought No. 4 digester onto the line. In the groundwood plant, meanwhile, it is not now necessary to make use of the full capacity of the 12 Waterous grinders. The object of conversion here was to obtain a longer, finer fiber than would be used in newsprint manufacture. This called first for a finer burr on the Norton stones used for grinding. These stones are 64 by 54 and are driven at 240 rpm by 3500 hp Electric Machinery Mfg. Co. motors. Bird rotary screens are now used following grinding with smaller openings than previously in operation.

On the sulfite side, rotary screens were replaced by Sandy Hill improved packer flat screens. There are four lines of primary screens and two lines of tailing screens—all fitted with Fitchburg chrome plated bronze screen plates.

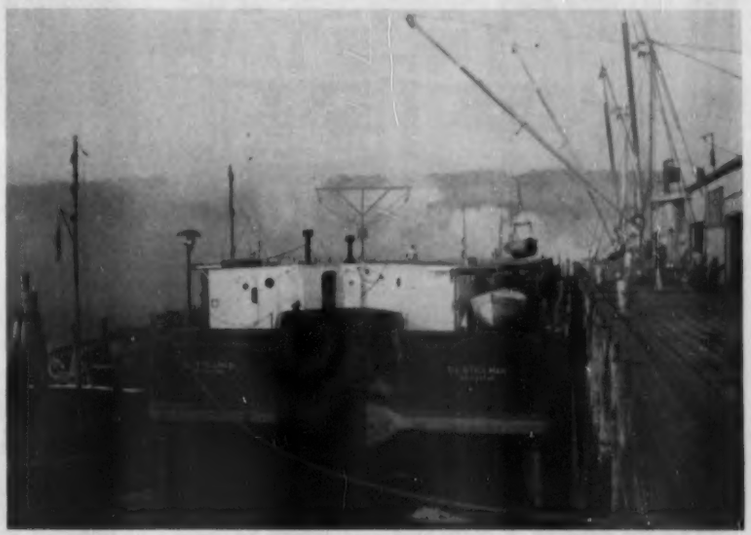
Other equipment installed in the conversion at this point included two Johnsson knotters with 3/16-in. perforated plates. Consistency to the knotters is held at 0.7% through control by Bird regulators. Two American Heat Reclaiming spiral coolers with 200 sq. ft. and 300 sq. ft. of cooling surface, respectively, cool low pressure relief from the digesters back to the acid storage tank. Trimbey proportioning and metering systems mix groundwood and sulfite ahead of the deckers.

The St. Regis plant was the first to bleach a mixture of sulfite and groundwood pulp with peroxides. *Life* stock must be manufactured in a brightness range of 68-69 and it was found peroxide bleaching could obtain this without shrinkage.

The mixed stock for the bleach tower is delivered over two 8 by 16 Improved Machinery Co. deckers at approximately 11% consistency. Decker level and temperature controls were supplied by Mason-Neilan, with Leeds & Northrup equipment recording rate of bleaching and pH after neutralization. There is a central control panel, by the way, from which the operator is able to control the whole bleach plant.

NEW TYPE COATED PAPER BARGE—AND MAN WHOSE NAME IT BEARS

N. L. (NICK) WALLACE, Vice Pres. of Time Inc., lives on farm near Kalamazoo but he proved sea-going talents, too, when he developed new barge system. For years *Time-Life's* chief liaison executive with paper industry—he spearheaded development of more and better paper for his company. This 2100-ton welded steel barge by Dravo Corp. makes roundtrip to Chicago from Maine in 2 wks.



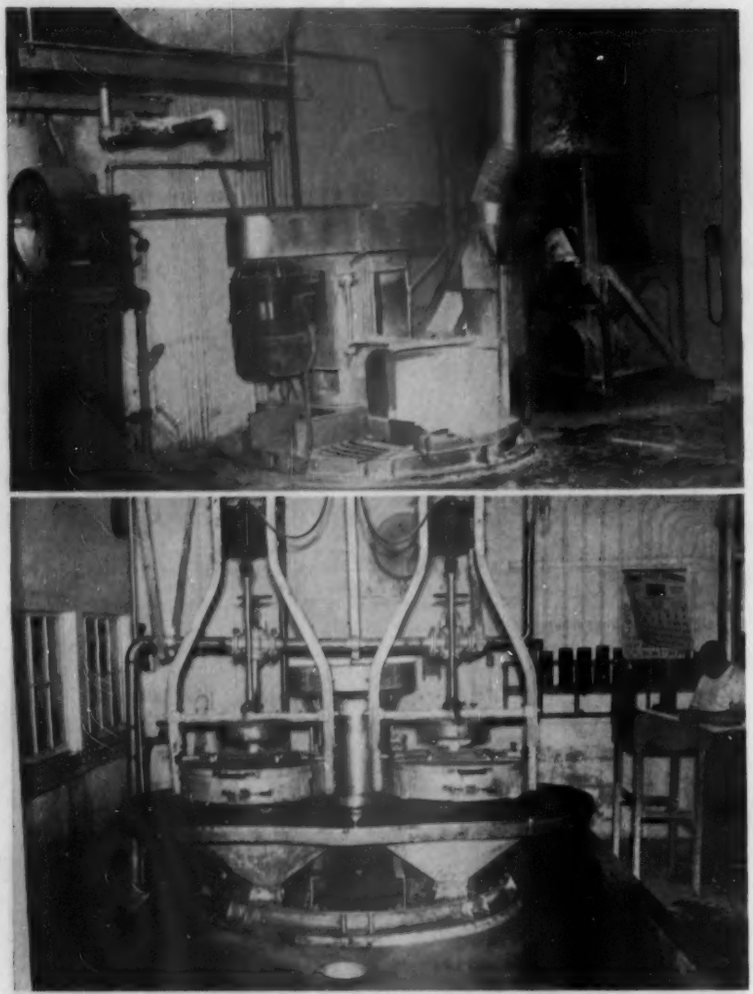
ROLLS OF PAPER are lowered into the C. L. STILLMAN, barge named for Executive Vice Pres. of Time Inc. Paper is then transported from Maine to big printing establishments of Chicago; round trip takes just two weeks.

How On-Machine Coating is Done

Biggest paper machine changes were on No. 2 which runs 100% on *Life* stock. On the old newsprint machines there was a 3-ft. pitch on the wire from the headbox in the first 80 ft. In conversion, the headbox was lowered and the wire leveled out. This change made it possible to obtain better control of basis weight and maintain high machine speeds.

Rice Barton Corp., which had made the original machines, made the changes in rebuilding. Rubber covered table rolls on Fourdrinier section were increased in size to 10½ in. All the table roll bearings and housings were changed. The dryer section of an original 48 dryers was broken to install a calender and the new Faeber coater. The first dryer section now consists of 40 dryers with Monel cover, and after dryer section contains 9 dryres, of which three are Monel covered. Both reels were rebuilt to accommodate larger diameter rolls, and hydraulic unloading features were added to the machine.

Rebuilt No. 2 can run at speeds of 1200 fpm on *Life* stock, which compares more than favorably with the



EQUIPMENT FOR COATING PREPARATION PROCESS

PART OF EQUIPMENT for R. T. Vanderbilt coating preparation process for LIFE stock at St. Regis: (Top) Fairbanks-Morse clay Weighopper, driven by 25 hp General Electric induction motor. Clay enters from silos at right. (Below) Combs Gyratory screens, as supplied by Great Western Mfg. Co.

1450 fpm design speed on newsprint for the machine. A continuing program of improvement will bring still higher speeds.

Stock ahead of No. 1 machine is now cleaned through Bird Dirtecs—26 primary and 26 secondary. On No. 2, Nichols Vortraps are used—26 primary, three secondary and one tertiary. Bird inward-flow screens using .018 plates were installed just ahead of the headbox on each machine, and plans for the future call for a Beloit-type pressure headbox for No. 2.

Liquid SO_2 is used to control pH from bleach plant to the machines. On No. 2, the first dryer section has a Stamm moisture control system with Brown Potentiometer for moisture recording and these same instruments are used in the after-dryer section following the coater.

Where No. 2 machine was split in the middle for the coater, a 4-roll Farrel-Birmingham breaker stack also was installed to carry the paper web into the coater.

The coater itself is one of the most interesting parts in the change-over. The coater was designed by Harry Faeber, head of the mechanical engineering section of Springdale, Conn., laboratories of Time, Inc. It is one of four in operation in the United States, with one of the others being in a St. Regis mill at Deferiet, N.Y.

Problem in the coater design, Mr. Faeber has told PULP & PAPER, is to provide even distribution of the coating at high machine speeds. The Bucksport coater can operate successfully at speeds of 1450 fpm, and Mr. Faeber believes it would be possible to operate similar types as high as 2000 fpm.

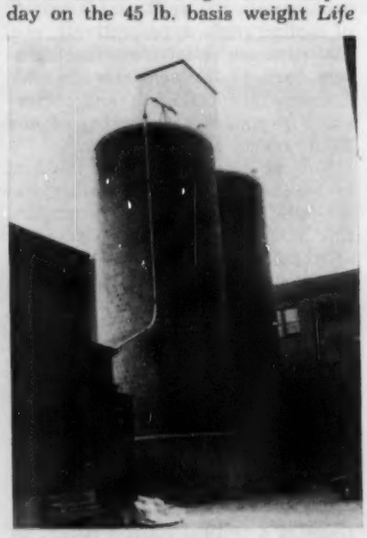
The Faeber coater employs principles of ink distribution systems in the printing industry, and it worked so successfully that it made satisfactory paper from its first startup at Bucksport. The coater has 6 distributor rolls, 2 applicators, 2 gate or metering rolls and 3 pinch coating rolls. These rolls have individual electric motor drives for control of distribution and speed. (The photographs of the coater itself and its control panel on these pages show its operation.)

The second important development involved here is the system for setting the coating before it reaches the top deck and enters the after-dryers. An enclosed "plenum" fits closely over the back-up roll following the coating so that as the sheet of paper travels upward it is subjected to streams of hot air blown through perforations in the plenum facing the sheet. The plenum is movable, so it can be drawn away from the roll in breaks and startups.

No changes were made in the machine setup from this point. The next important requirement was the installation of supercalenders.

Three supercalenders were brought in, one from the St. Regis mill at Kalamazoo, and two new high-speed machines made by Appleton Machine Co. These are some of the finest in the industry, providing supercalender quality at speeds up to 1700 fpm. These are followed by two Camachine-18 rewinders.

Production from the revamped No. 2 machine averages 190 tons per day on the 45 lb. basis weight *Life*



TWO 65-TON SILOS provide clay storage for Bucksport mill. Silos were built by Stebbins Engineering Co. and are equipped with Fuller Airveyor systems.

A Regular One-Man Band . . .
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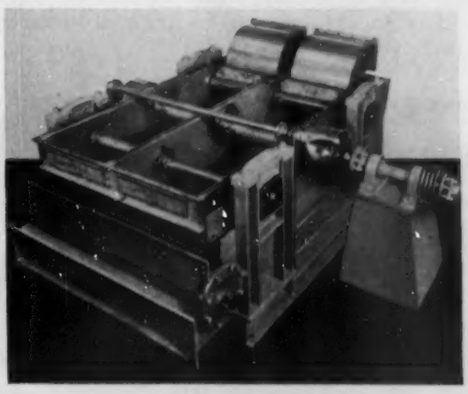

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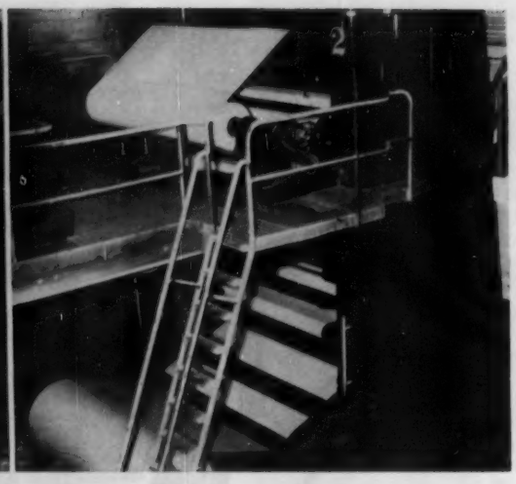
CONTROLS PAPER MOISTURE

BROWN Potentiometer for moisture recording (left) and Stamm moisture control system with Taylor instruments (right). Same instrumentation is used in after-dryer section.



LIFE PAPER IS SUPERED

LIFE Magazine stock from No. 2 machine is supercalendered on two Appleton Machine Co. supers. Stacks are driven by 300 hp Reliance motors with Falk herringbone speed reducer.

stock, and the record run from the machine is 212 tons.

The R. T. Vanderbilt system for coating preparation was installed for the Bucksport mill. This system employs the use of an automatic Fairbanks-Morse "Weighopper" for metering the clay from the silos; Tyler screens and Combs Gyratory screens; and Struthers-Wells mixers. The two 65-ton Stebbins clay storage silos are filled from rail cars by automatic Fuller Co. Airveyor systems.

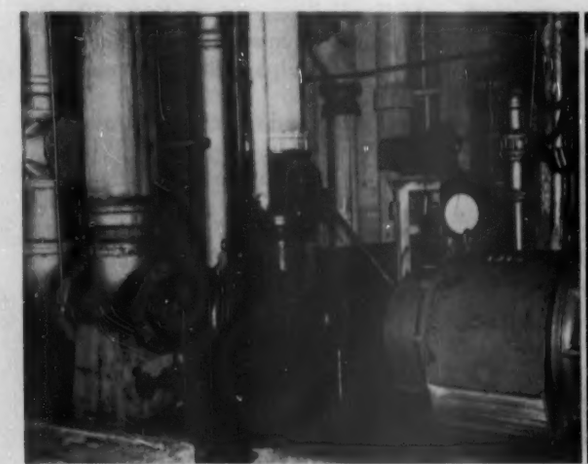
Barged All Way to Chicago

Since Bucksport is near the mouth of the Penobscot river and in a navigable area, it was natural that water transportation be considered in shipping finished products. A good percentage of the pulpwood and raw material supplies come in by boat, and under the present arrangement almost all of *Life* paper is shipped the same way.

In all but the winter months, when *Time-Life* takes delivery of its paper in Philadelphia, delivery is taken dockside, Bucksport. There are two *Time-Life* welded steel barges, the C. L. Stillman, named after Time, Inc.'s executive vice president, Charles Stillman, and the N. L. Wallace, named after Nick Wallace, of Kalamazoo, another Time vice president, and who was particularly responsible for establishing water transportation system for the organization. For years, Mr. Wallace was principal liaison executive between Time Inc. and its paper suppliers.

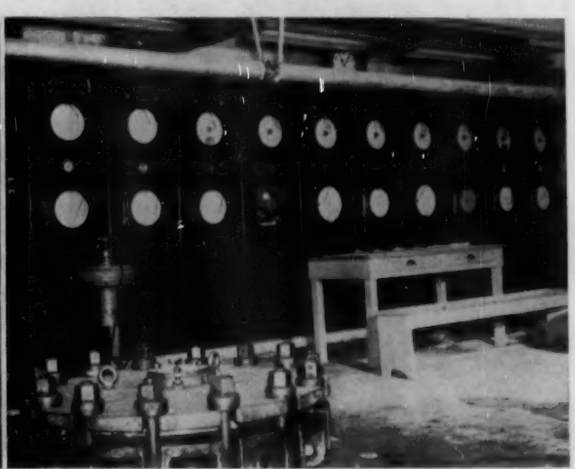
Each barge has 2100-ton capacity, and can make the round trip from Bucksport to Chicago in two weeks. The route of the barges is from Bucksport down the coast to New York, up the Hudson River, through the Erie canal, Lake Erie, Lake Huron and Lake Michigan to Chicago dockside. Barges by Dravo.

Lift trucks are used by St. Regis to handle the finished paper rolls in storage and delivery to dockside, with Clark and Elwell Parker types being used.



HOW PULPS ARE MIXED

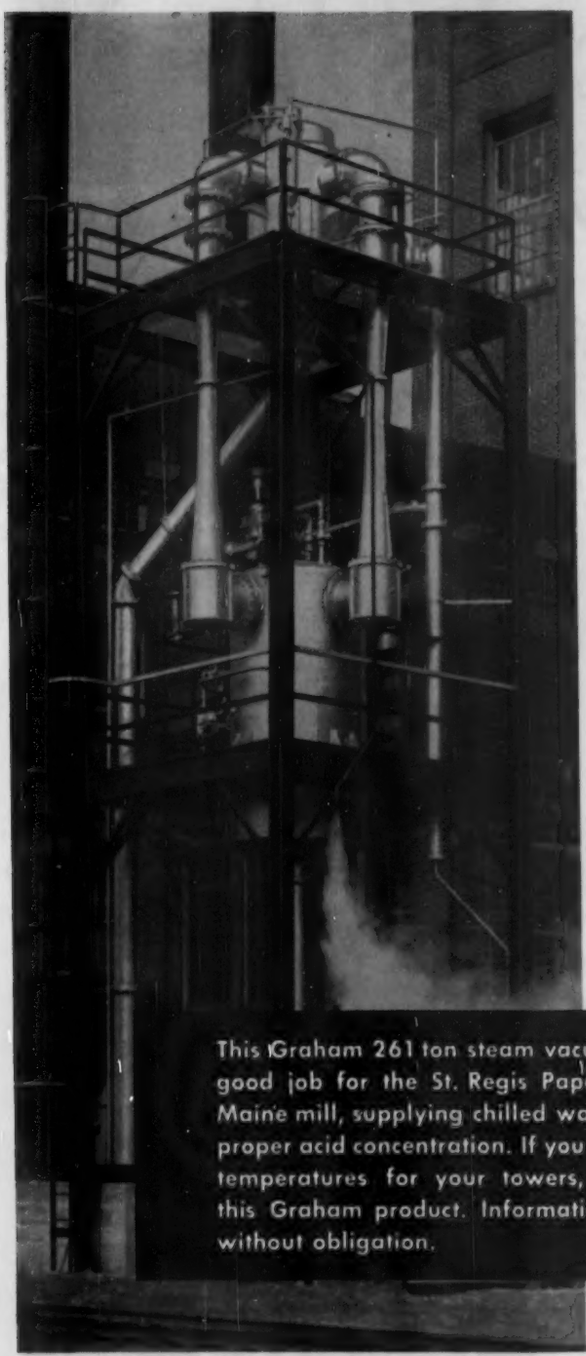
MIXING SYSTEM FOR DECKERS. White water line at left; mixture of groundwood and sulfite enters at second line; and at right is Warren mixing pump to deckers powered by 125 hp Louis Allis motor.



WHERE COOKING IS CONTROLLED

CONTROL CENTER FOR DIGESTER 5—steam, pressure and temperatures. Controls and recorders are Mason-Neilan. Digester temperatures are taken both top and bottom.

Chilled Water for Your Acid Towers



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This Graham 261 ton steam vacuum refrigeration unit is doing a good job for the St. Regis Paper Company at their Bucksport, Maine mill, supplying chilled water to their acid towers to permit proper acid concentration. If you do not have proper chilled water temperatures for your towers, it will pay you to investigate this Graham product. Information will be gladly supplied you without obligation.

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Kalamazoo Valley Extends Welcome to Hamilton & Sons

WARM GREETING IS EXTENDED

MILTON R. BAILEY, of Kalamazoo, Vice Pres., Bulkley, Dunton Pulp Co., was host at a Park Club dinner there at which Kalamazoo Valley paper industry executives and others welcomed top executives of W. C. Hamilton & Sons, Miquon, Pa., new owners of Michigan Paper Co. of Plainwell. L to R: WILLIAM RACE, Pres., Sutherland Paper Co., who made welcoming address; HUGO H. HANSON, Chairman of Hamilton & Sons; MR. BAILEY; J. H. DUNTON, Sales Mgr. of Hamilton, and FRED ENDERS, New York, pres. of Bulkley, Dunton Pulp Co., toastmaster.

OTHERS AT KALAMAZOO

LANE TAYLOR (left), Pres. of W. C. Hamilton & Sons, who outlined plans for expansion at Plainwell Mill, and RALPH BASTIEN SR. (right), Pres. of Booth Newspapers Inc., which sold the Michigan mill to Hamilton.

Plans for Expansion Of Plainwell Mill

Remodeling of two papermaking machines and modernization and expansion of other plant facilities at Michigan Paper Co. of Plainwell was announced at a Kalamazoo dinner by Lane Taylor, president of the new owners, W. C. Hamilton & Sons. The goal will be upgrading of printing paper and quality paper products.

About 40 Kalamazoo Valley paper company executives and others welcomed the Hamilton officials at a dinner hosted by Milton R. Bailey, vice president of Bulkley, Dunton Pulp Co. Tribute was paid Allan Milham, president, and Ethol Stone, a director, who continue with the Michigan mill.

Another Bleaching Process Starts Up

Having completed an extensive modernization program at Port Mellon, B.C. (PULP & PAPER Oct. 1953), Canadian Forest Products Ltd., one of British Columbia's major integrated wood-using organizations, set out a few months ago to upgrade and increase the marketability of kraft pulp through semi-bleaching.

The new system has now been installed and is capable of treating the entire output, 180 tons daily.

Sandwell & Co., of Vancouver, B.C., did the engineering and British Columbia Bridge & Dredging Co., was main contractor.

The process is based on the bleaching method and equipment developed by Hooker Electrochemical Co.

First stage consists of chlorination, followed by alkaline oxidation. A second stage comprises low density hypochlorite bleaching. A Sherbrooke valveless (Lindblad-type) bleach washer, first in Canada, is used.

Hooker equipment consists of a primary chlorine mixer, a chlorine reactor, a milk of lime mixer and hypochlorite mixer.

Pulp goes from existing chests to the chlorine mixer and then to the chlorine reactor. After that it is neutralized with milk of lime and then goes to the wood stave retention tower which overflows into the Lindblad washer. Stock is then mixed with hypochlorite and passes to two retention towers overflowing to the machine chest.

Most instrumentation is by Foxboro, with Mason-Neilan control valves. Equipment includes a turbine mixer by Mixing Equipment Co., stock pumps by Bingham, vertical agitators for bleach towers by James Brinkley & Co., Seattle, and General Electric drives.

St. Regis Partner In New Kraft Mill

Announcement by President Roy K. Ferguson that St. Regis Paper Co. is a partner in the proposed $30,000,000 bleached sulfate mill to be built at Edson, 130 miles west of Edmonton, Alberta, increased interest in this project.

Vice presidents W. R. Adams and Joe Quinlan; John Ferguson, manager at Jacksonville; Justin H. McCarthy, chief engineer and builder of St. Regis mills in Jacksonville, Fla., and Tacoma, Wash.; H. V. Hart, Northern woodlands manager; and U. J. Westbrook, kraft production manager, surveyed the site.

St. Regis and North Western Pulp & Power Co. will each provide $5,000,000 of the proposed $10,000,000 equity capital, and a balance of $20,000,000 will be subscribed from other sources. North Western is a subsidiary of North Canadian Oils Ltd., Calgary, Alta., headed by Frank E. Ruben, of Montreal.

St. Regis will manage the operating company and plan construction.

Initial pulp capacity will be 300 tons daily, with provision for future paper machines. It is estimated the mill will have 65 years supply of virgin timber alone.

New V.P. for Gottesman

D. Samuel Gottesman, president of Gottesman & Co. Inc., New York, which represents American, Canadian and Scandinavian producers of woodpulp, has announced the election of Theodore R. Wilbert as a vice president of the company. This addition, Mr. Gottesman stated, was due to the expanding operations of the Gottesman organization requiring an enlarged staff. Mr. Wilbert has been connected with the pulp and paper industry for over 20 years.

THEODORE R. WILBERT is newly elected Vice Pres. of Gottesman & Co., Inc.

Photo courtesy of the U. S. Printing & Lithograph Co., Cincinnati, Ohio.

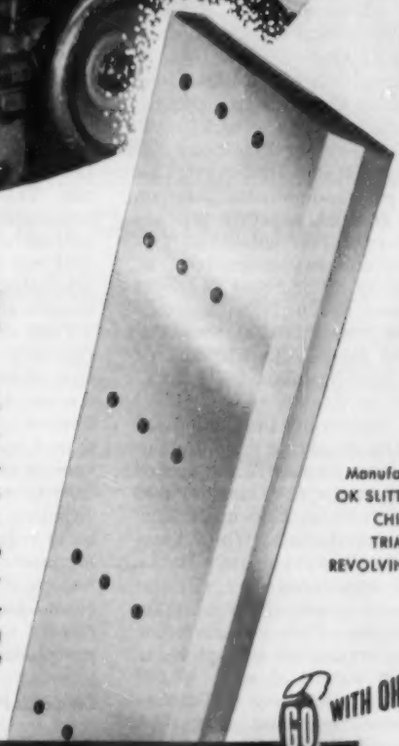
it's OK let'er go!

"Precision trimming—longer runs with OK SUPER paper trimming knives"—reports U. S. Printing & Lithograph Co., Cincinnati, O.

Actual tests made in companies requiring this operation have conclusively proven OK Knives deliver 20% to 30% longer service, resulting in more production at a lower cost!

OK Knives are made of the finest alloy steel specially hardened to stand the heaviest cutting, while still retaining an ultra keen edge.

OK SUPER paper trimming knives are beveled and hardened for practically all types of cutting. For unusually tough jobs like trimming aluminum foil, film, cellophane, glued board, plywood, etc., these knives are available in special bevels and hardnesses.



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Where and Why World Demand for Woodpulp Increases—as Seen by Expert Abroad

Highlights of Reed Porter's survey of the future world pulp market, as reported in PULP & PAPER interview, following his trip abroad:

1. North America will have to supply an increasing proportion of world pulp needs due to limited Scandinavian expansion and increased consumption in Great Britain, France and West Germany.
2. Despite our increased market pulp capacity, we could very easily have had a pulp shortage last Fall. However, large Scandinavian pulp inventories plus currency restrictions in pulp consuming countries prevented this.
3. World pulp consumption and production will hit new highs in 1954.
4. Regardless of world market developments, Scandinavian mills will definitely try to keep their position in the U. S. pulp market.
5. Swedish production in 1954 will have some increase due to conversion to 7-day-week operations and modernization.
6. World production of bleached pulp, especially kraft, is on the increase.

REED PORTER, back from Europe for Pulp Consumers, tells what he saw.

WHAT IS THE PULP situation in the world market? What markets are there for the new North American woodpulp supply?

PULP & PAPER went to Reed Porter, executive secretary of the Assaciation of Pulp Consumers, Inc., for the story of impressions and information he gained on a recent tour of Scandinavian and other European countries. He adds many interesting facts to the report on "World Pulp Trends" which features PULP & PAPER'S 1954 WORLD REVIEW NUMBER, published in July.

Combining North American and Scandinavian market pulp, 1954 production should be close to 5,200,000 tons, a new high for these two areas in recent years, said Mr. Porter. This is just "a practical potential based on expected demand, expected production and operating conditions and could vary one way or another," he said. This is an increase of about 625,000 tons above 1953. Approximately 44% or 2,200,000 tons will come from North America; 55% or 3,025,000 from Scandinavia, he forecast.

North American production of market pulp should be the largest in recent history, he said. A new record was made in the first quarter, and since then several new mills have come into production. While these are largely dissolving pulp mills, they have announced they will also make paper grade chemical pulp. New Ketchikan Pulp and Rayonier mills have announced market paper grade pulp output of about 60,000 tons annually. Bowaters in Tennessee is now producing, and East Texas Pulp & Paper will come into production in October, these two adding another 100,000 tons to market supply. If to this is added the potential supply of paper grade pulp, production will exceed demand, he said. The four mills mentioned, plus Buckeye Cellulose, will increase bleached pulp potential by close to 400,000 per year. All this being bleached, this places North America in the dominant role as producer of bleached pulp. Despite this large increase in market pulp capacity, expected U.S. production of paper grade pulp is less than one half of our market pulp requirements, and when combined with Canadian, it is still short of expected consumption, leaving us to some extent dependent on Scandinavia, he said.

As seen by Mr. Porter, Scandinavia is still the dominant factor as supplier of world market pulp; supplying an estimated 56% of 1954 output. This applies particularly to unbleached grades. World market unbleached sulfite production in 1953 was 1,340,00 tons, of which 72% originated in Scandinavia, 24% in Canada and only 4% in U.S.

Total shipment of unbleached sulfate to world markets was 1,140,000 tons, of which 73% came from Scandinavia, 15% from Canada and 12% from the U.S. Mr. Porter does not expect any material change in this general pattern in 1954 as no new unbleached mills are under construction. If there is a change, it will be to reduce supply as new bleaching plants are installed. This is logical in view of declining trend of consumption of unbleached and increased consumption of bleached, particularly bleached sulfate.

Swedes Plan Minor Increase

Mr. Porter said he was assured in Scandinavia that it desires to maintain its position in the U.S. market and that the usual tonnage will be allotted to this market irrespective of developments in the rest of the world. With regard to increased paper production in the Scandinavian countries, no new paper mills are planned, although several existing mills expect to substitute modern high-speed paper machines for present narrow and old-style machines. This will, in effect, increase paper output, particularly newsprint and kraft paper, which the Swedes believe are logical expansion media for their domestic and European paper markets.

Very little pulp expansion is expected in Sweden because of a limitation on wood cutting due to existing world prices said Mr. Porter. Several Swedish mills are now importing wood from Finland. Of existing timber in Sweden, approximately 25% is company owned, 25% government owned and 50% is owned by small lot farmers. Some companies own up to 85% of their wood supply, buying the remainder; others own practically none.

One new 50,000 ton bleached kraft pulp mill is planned for southern Sweden, where reforestation has developed an additional wood supply. Construction is expected to start soon, but it will be several years before pulp production gets underway. There will be some increase in Sweden due to modernization and additions in existing mills, but most additional pulp production will be the result of gradual conversion from six to seven day operations. This trend started in 1953 and is spreading. Mills which have introduced 7-day-week operations estimate an increased output of about 20% and lowered production costs per ton of pulp, despite higher wages paid for Sunday operations. Unions in two mills have approved

an indefinite extension of Sunday operation and also approved six months trials in two large mills beginning last May 1.

The pulp and paper industry in Sweden is entirely unionized. Unions are well run and cooperate with the mills. Mill managers are quite happy about the setup, said Mr. Porter. The union assumes entire responsibility for controlling the men, enforcing discipline and terms of contract. There have been practically no strikes for many years.

In 1953, the unions agreed to an annual wage, based on levels identical with 1952 with no increase. The same contract was approved in Feb. 1954 but with a 2.4% increase. The 1953 average hourly wage was 3.83 krones (76.6¢) in pulp mills and 3.63 krones in paper mills. Labor costs in Sweden are lower than in North America in relation to value of pulp or gross income. In 1951 wages were only 5.4% of chemical pulp sales value.

Big item in pulp costs in Sweden is wood, which in 1951 was 39.6% of chemical pulp sales value. However, wood costs have come down substantially since then. In the 1952/53 season, purchases were almost 50% below the previous year's prices and close to the 1950 level.

Many mills visited, while basically old, were doing extensive modernization, said Mr. Porter. Many were installing latest labor-saving devices, despite relatively low labor costs, and were instituting modern production practices. These developments, combined with the trend to 7-day operations, will result in the largest tonnage production in many years in 1954, he predicted.

Finns Can Expand Greatly

Mr. Porter sees Finland as slowly but steadily increasing production. Its outlook is the best in many years, he said. Wild inflation, which resulted from the Russian War, has now been fairly well arrested. Government finances are sound and Finland had an exchange surplus in 1953 and will again this year.

Finland is the only country in Europe with an excessive supply of wood, sufficient to permit a major expansion in pulp production. Finland currently exports wood principally to Germany, Sweden, and England. The pulp industry is now operating at full capacity. Less efficient mills were closed in 1953 because of high operating costs and low world prices, but are again operating full.

Total chemical pulp capacity is now about 1,650,000 tons. Her own industry consumes about 700,000 tons leaving about 925,000 tons for export in 1954. Wood costs are high, currently averaging about $64.00 per ton of pulp.

Labor rates in Finland are slightly lower than in Sweden. Mills are being gradually modernized and new paper machines are being installed. March pulp production was about 149,000 tons, up to then a postwar monthly record. In April, new paper machines were installed at Tervakoski and at Kotka. The new Sunlia pulp mill is extremely modern, he said. The Finns expect to gradually increase production of pulp and paper and have the capital to do so.

Controls and Taxes Hamper Norway

Mr. Porter says the Norwegian industry is hampered by high taxes and restrictive government measures.

Norway is operating under a wholly socialized government, he said, with near confiscatory taxes, both individual and corporate. The

Roll Covering Firm Opens Plant

STOWE-WOODWARD'S *President,* **E. W. PETERSON,** *watches lathe work done in preparing roll-core by Operator* **WERNER JONCHER** *in new Neenah, Wis., Plant, in upper picture.*

PAPERMAKERS *and other guests see crude rubber prepared for roll covering at Neenah Plant Housewarming in picture at left. Three visitors in front row are (l to r):* **I. J. STAFFORD** *(in dark jacket),* **Neenah Paper Co.;** **CHAS. ROSE,** **Sure Strike Co., and** **FRED GEDEMER,** **Nekoosa** *Foundry. In back row (l to r):* **SCOTT EAGLESON,** *Escanaba Paper Co. (head shows behind Mr. Stafford);* **JOHN ARNOLD,** **Escanaba Paper** *(behind Mr. Rose);* **CARROLL W. WALTERS,** **Stowe-Woodward,** *Inc. (behind Mr. Gedemer).*

AT LOWER RIGHT *are two men who handle Middle West sales and service to pulp and paper industry for this new Stowe-Woodward Plant:* **JACK DICKSON** *(left), of Kalamazoo, a University of Maine graduate with long experience in pulp and paper field and* **DAVE McRITCHIE** *(right), born and educated in South Carolina, now based in Franklin, O. He was a Navy aviator and instructor, joining S-W in 1953.*

Stowe-Woodward Builds Plants Closer to Mills

More than 125 papermakers got their first look at Stowe-Woodward's new roll covering plant in Neenah, Wis., June 15. Visitors witnessed the complete processing of rubber covered rolls.

Equipment duplicates the S-W's Newton, Mass., plant, providing for covering of the largest rubber covered rolls in papermaking.

The new plant manager, Wm. Mordo, and asst. manager, Will Chandonait, both came from the plant at Newton.

According to S-W's president, E. W. Peterson, the new plant is the first step of a program aimed at closer working relations with U.S. mills. Ground was broken in July for a new plant in Griffin, Ga., to start up Jan. 1, 1955.

government controls investment in industries through its fiscal and other regulatory powers. Sulfate mills have been given priority for new construction because they can utilize pine and sawmill slabs. At present, Norway has only six small sulfate mills producing about 30,000 tons a year, he said.

Second priorities go to bleached sulfite mills because of the ability to handle small dimension timber and some waste materials.

There is a wood shortage in Norway, especially spruce. Future expansion in pulp production probably will be limited primarily to sulfate. The present tendency is to increase paper output rather than pulp. This applies particularly to kraft paper and paperboard. Both established new production highs in 1953.

There is one new semi-chemical pulp mill planned. Otherwise, current plans are restricted to modernizing and consolidating existing mills. Because of high taxes and restrictive government measures, few pulp producers are inclined to invest money in building new mills.

Record Predicted in Market Pulp Consumption

Mr. Porter, as a result of his European tour, predicts that Free World consumption of paper grade market pulp will hit a new high in 1954, with more than 5,000,000 tons consumed, an increase of close to 1,000,000 tons over 1952. This data does not include Soviet dominated countries, whose market pulp supply would be comparatively small.

Total U.S. consumption of market paper pulp is expected to be almost one-half, about 48%. Together with Great Britain's expected consumption, these two countries will consume about 70% of the total. France's expected consumption is 6.5% and West Germany's, 5.8%.

Britain Expanding, Looks to America

Mr. Porter found Great Britain awakening to kraft paper and board possibilities. Its industry was badly dislocated during the war; 16 paper machines were completely destroyed and many others damaged. Many mills had to close because of bomb damage and lack of pulp.

Since the war, the British government has had import controls in effect. For the last few years, they are on a currency allocation rather than a tonnage basis. Most destroyed mills have been renovated, with the result that they are fairly modern. Several new mills have been built and others have installed new machines. As a result, despite the currency restrictions, 1953 pulp consumption surpassed 1939.

The British industry expects a 20-25% increase in 1954 market pulp consumption over 1953, particularly since the government has increased currency allotments to the industry by 16% for the last half of 1954, said Mr. Porter. The balance of the increase will be realized from the carry-over of 1953 unused allotted currency. Paper is the only major industry in Great Britain which is still under import controls. All paper "rationing" except newsprint had been lifted and PULP & PAPER recently published reports that newsprint restrictions soon will be lifted, too.

England realizes that because of the limited expansion in Scandinavian pulp output, she will have to look to North America for much of her increased pulp supply, said Mr. Porter. If their consumption measures up to current expectations (many paper mills are believed sold out for the balance of the year), they expect to buy close to 200,000 tons of pulp from North America in 1954. They also believe that 1955 will see further expansion, as several paper companies expect to install new machines in the coming year. They particularly expect to expand in kraft and paperboard, believing their markets for these products have hardly been scratched.

France Wants American Pulp, Too

Mr. Porter found the French pulp and paper industry going through serious adjustments.

French pulp mills produced about 270,000 tons in 1953, of which roughly 100,000 tons was unbleached sulfite, 90,000 tons unbleached kraft, and 80,000 tons bleached sulfate. There was no production of bleached sulfite. Approximately 400,000 tons of pulp, or about 60% of consumption, was imported in 1953.

The industry is talking of expanding integrated production by construction of several mills in Southwestern France, where there is an excess of wood, said Mr. Porter. However, domestic pulp is considerably higher priced than imported pulp with the result that a penalty fee, now about 25%, is currently being levied on imported pulp. Funds realized from this penalty fee are used to subsidize domestic pulp production. This results in spirited arguments between importers and integrated mills.

The outlook for immediate expansion in the French industry isn't too optimistic, said Mr. Porter. During his visit, the paper industry was building paper inventories; consequently, they were expecting some slackening in production during the third and fourth quarters.

Market in Germany for America

West Germany is making very rapid recovery. She lost much of her wood resources and much of her pulp production in northeast Germany to Russia. Prior to the war, Germany exported pulp, but now she imports about 40% of her requirements. Mr. Porter sees West Germany as a market for North American pulp.

West Germany's chemical pulp production in 1953 was about 450,000 tons of paper grade pulp, all sulfite. About 40% was made from imported wood. It imported about 270,000 tons of pulp in 1953; 183,000 tons being sulfate.

Pulp imports are controlled by specific currency allocations. However, internal financial conditions are getting better and the paper industry is hopeful of release from all currency restrictions in the near future. Dissolving pulp was placed on the free list about April 1st. Bleached pulp was expected to be next, said Mr. Porter.

Paper consumption has increased. both per capita and total. Because of the lack of wood, particularly softwoods, pulp expansion will be very moderate, probably confined primarily to semi-chemical mills which can utilize the hardwoods in West Germany.

A new board mill was recently completed and expansion of paper production also is planned. Here again, the industry is looking to North America for a larger portion of pulp supplies in the future. West Germany is particularly anxious to get more American bleached kraft and is currently buying some.

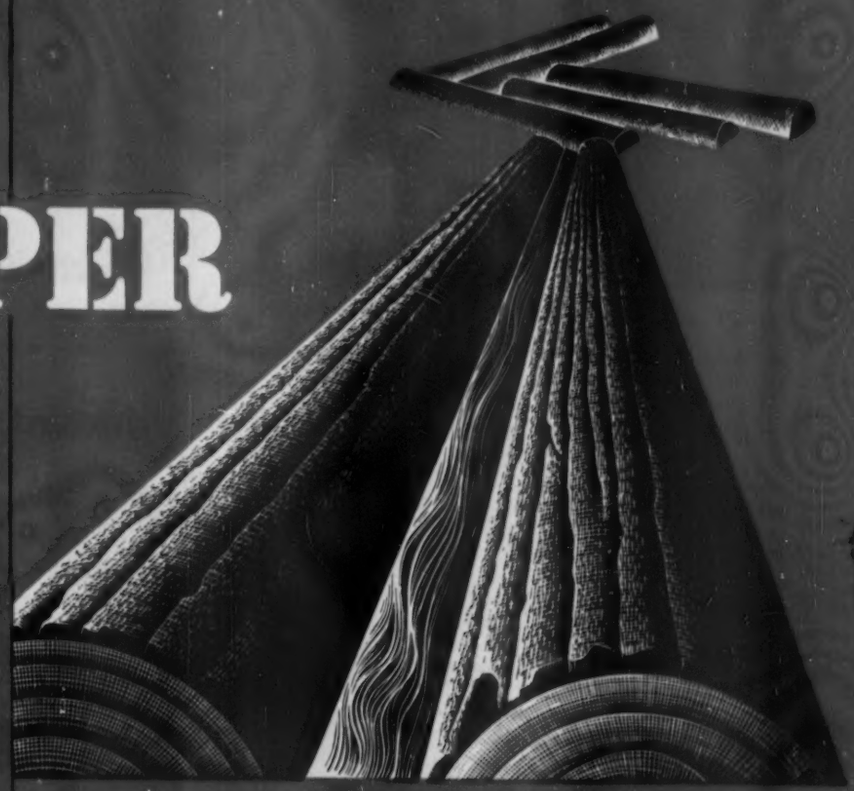
Missed a Serious Shortage

Here's how Mr. Porter summarized his trip:

"After making this inspection trip, and talking with both consumers and suppliers, I came away with the feeling that the North American continent must supply an increasing proportion of world pulp needs. Despite our increased market pulp capacity here, we could very easily have had a pulp shortage last Fall, except for the large Scandinavian pulp inventories carried over from 1952 and the currency restrictions in the major consuming countries."

WOOD PULP

PAPER



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HERE'S SCENE OF VAST $13,500,000 EXPANSION PROGRAM

CANADA'S PARLIAMENT BUILDINGS in Ottawa form interesting backdrop for these E. B. Eddy Mills spanning Ottawa River.

How Eddy Co. Has Become Self-Sufficient in Pulp Needs

THIS YEAR will see completion of a four-year program of major improvement and modernization at the mills of The E. B. Eddy Co., Ltd., at Hull, Que., and Ottawa, Ont.

Over-all objective has been to make the mills self-sufficient in production of bleached sulfite and groundwood pulps for conversion into high grade fine papers and tissue products, which constitute the company's principal output. The company also manufactures newsprint and paperboard.

New wood handling facilities have been installed at the Hull sulfite mill to handle all incoming car and truck wood samultaneously. A rail unloading conveyor system to handle ten cars at a time has been established to operate in conjunction with a truck unloading point where four trucks can be unloaded simultaneously. All conveyor structures are of structural steel with Link-Belt catenary type chain conveyors at the car unloading point and with rubber belt conveyor to carry the wood overhead to the woodroom.

ACTIVELY IN CHARGE of operations of E. B. Eddy Co. at Hull and Ottawa is Vice President and General Manager A. WELCH (left), one of the youngest top executives in the Canadian industry. D. G. CURRIE (right) is Manager of Manufacturing and has been directly in charge of most phases of the company's recent modernization program.

THESE MEN PLAYED A BIG PART in recent modernization of the big Eddy mills close to Canada's national headquarters. L to r: D. G. McCRONE, Mill Manager for pulp mills; R. T. TOURANGEAU, Mill Manager for paper mills; L. STERNS, Installation Superintendent; T. FOULKES, Chief Plant Engineer; K. F. WRANGELL, Chief Design Engineer.

Complete reconstruction of the woodroom is designed to handle incoming river, car and truck wood simultaneously. Two existing Waterous welded drum barkers have been rehabilitated. One of the two 4-knife chippers formerly operated has been replaced by a Carthage 84-in. 10-knife chipper, belt-driven by a 350 hp wound rotor motor. The other 4-knife chipper was left in service for oversize wood.

Refuse from barking is now passed through a new American Defibrator screw type bark press operating without prior hogging.

The acid plant has been modified to conform to the increased sulfite pulp capacity by the installation of a second 30,000-gal. raw acid storage tank. This is pre-stressed concrete construction, tile lined, installed by Homad Service.

As part of the sulfur economy program, a G. D. Jenssen pressure recovery tower 5 by 45 ft. of stainless steel construction was installed, and it has given effective service in assisting maintenance of acid strength during warm weather.

A sixth digester, 17 by 47 ft., has been set up to increase capacity of the Hull sulfite mill to 250 tons. This digester is of riveted construction, though consideration was given to a welded shell. The digester building has provision for a seventh unit when required. The building was designed by Stadler, Hurter & Co. and incorporates concrete chip bins, hardwood lined. The new digester is equipped with circulating system by Chemipulp Processes.

All the company's digesters are now equipped with mechanical and steam packing, current operation being the latter.

The existing round screens have been replaced by three Mark C. Cowan screens, the rejects from which are re-screened and are then to be handled by 200 small and two large Bauer cleaners (Centri-cleaners), which will eliminate use of all unbleached flat screens.

The first Lindblad pulp washer to be installed in Canada was supplied by Sherbrooke Machineries, mounted in a tile vat supplied by Stebbins Engineering, and it handles all unbleached stock for the bleachery.

The entire white water system in the sulfite mill has been modernized, existing piping being replaced throughout by stainless steel. Bulk of production is bleached in the 4-stage bleachery built in 1947, described at the time in PULP & PAPER, increased now to 200 tons capacity with larger pumps.

Other Improvements

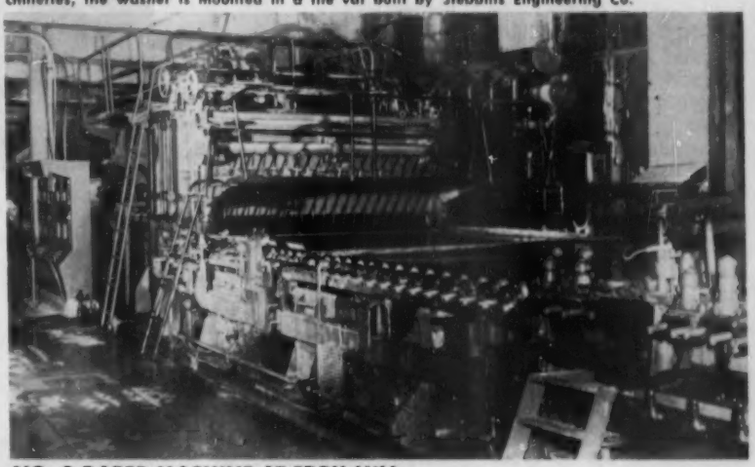
The wound rotor motors in the groundwood mill have been replaced by synchronous motors of higher horsepower and the wood stave slush line, over a mile in length, replaced by 16 in. Transite line supplied by Johns-Manville.

The specialty paper mill in Ottawa, comprising one 135 in. and two 151 in. Fourdrinier machines, has been thoroughly modernized. The original Dilts hydracycling system supplied by Alexander Fleck Ltd., associate of Black-Clawson Shartle & Dilts, has been augmented by addition of two new Hydrafiners. Each machine has been equipped with a pre-formed tile machine chest, erected by Stebbins, with propeller agitation by Wm. Kennedy & Sons.

Stock preparation consists of passage through Jones Imperial jordans in a closed system utilizing DeZurik consistency controller and control valves. Four new 3A Bird screens have been installed and on one machine 10 primary and one secondary Bauer Cleaner. Two machines have

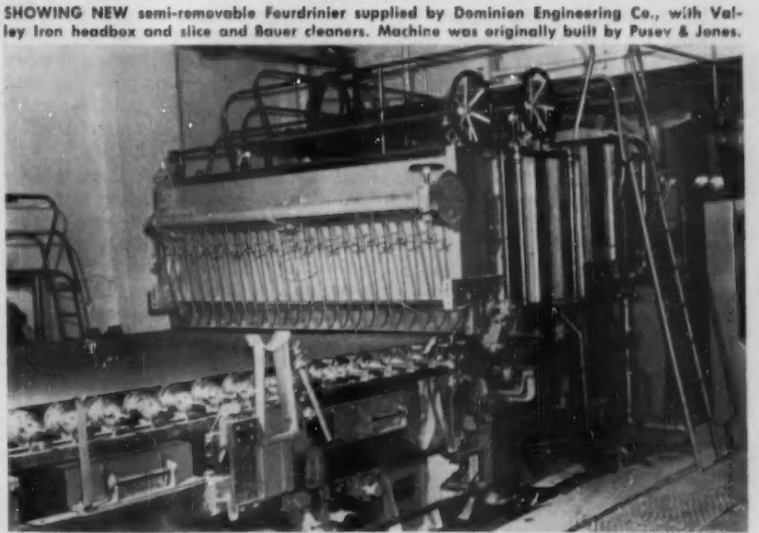
SECTION OF FOUR-STAGE SULFITE BLEACHERY

THIS IS FIRST Lindblad pulp washer to be installed in Canada. Supplied by Sherbrooke Machineries, the washer is mounted in a tile vat built by Stebbins Engineering Co.



NO. 9 PAPER MACHINE AT EDDY MILL

SHOWING NEW semi-removable Fourdrinier supplied by Dominion Engineering Co., with Valley Iron headbox and slice and Bauer cleaners. Machine was originally built by Pusey & Jones.



NO. 11 PAPER MACHINE

VALLEY IRON WORKS headbox and slice are shown in this picture of No. 11 paper machine, originally built by Pusey & Jones, equipped with Dominion Engineering Co. wet end, drive units and press sections.

been equipped with new Valley Iron Works inlets.

Three machines have been equipped with new semi-removable Fourdriniers supplied by Dominion Engineering Co. Fourdrinier rails are stainless clad and rubber covered table rolls are mounted on anti-friction bearings, the entire assembly being of very rugged construction. Drives are now being modified to give maximum speeds of 1000 fpm. The machines are equipped with suction couches and first presses built by Dominion Engineering Co. Two new ten-roll Dominion calender stacks have been installed.

The finishing room in the Hull mill has been entirely modernized with much new equipment.

The Harland drive of the 234 in. Walmsley newsprint machine has been modified for operation at higher speeds. General rehabilitation of this machine has included a new two-pass headbox, stainless steel lined, increased vacuum pump capacity, replacement of calender rolls, new reel drum and new drainage. The Ross Engineering ventilating system has been rebuilt.

New Yankee Machine Installed

One feature of the new construction has been the acquisition of a new 149 in. Beloit Yankee machine, designed for 2400 fpm, equipped with pressure headbox and Reliance electric drive, with Ross Engineering hood and ventilation. The engineering of this part of the job has been carried out by Chas. T. Main, Inc., of Boston.

The tissue converting department is being entirely modernized.

Material handling facilities throughout the mill have been modernized, most of the handling being based on use of pallets. Delivery of pulp and other materials between mills is by tractor-trailers and the company's own railroad cars driven by two General Electric diesel locomotives.

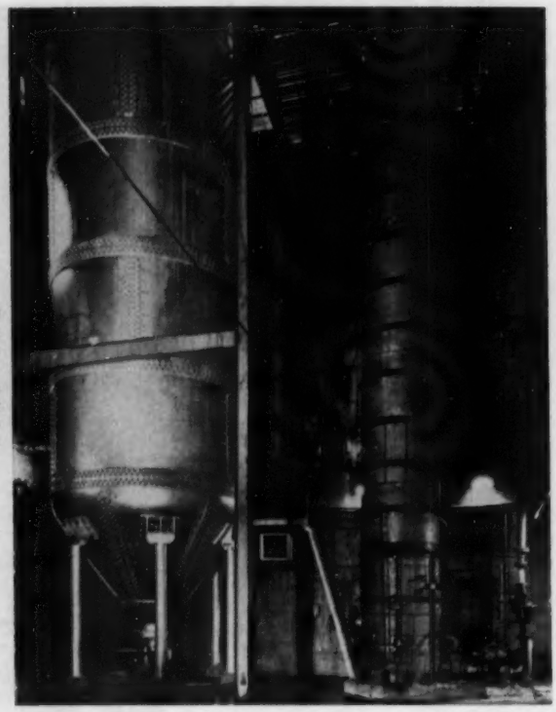
The company generates two-thirds of its own power requirements in three hydro-electric power houses, the output of which is combined with purchased power through a new 11,000 volt power distribution system.

The Hull steam plant has been improved by addition of new boiler meters and combustion controls with addition of a new hot well and pumps.

The service shops of the company have been given a "new look" in operation as well as appearance by addition of new lathes, pipe and bolt threading machines, a new 36-in. Farrel-Birmingham two-wheel roll grinder with variable speed electrical controls.

RECOVERY TOWER

G. D. JENSSEN pressure recovery tower, shown here at left, is of stainless steel construction and plays an important part in the company's sulfur economy program.



Older than Ottawa

Because of its history and its location in the national capital, within view of the Parliament Buildings and the famed Chateau Laurier, the E. B. Eddy Co. is one of Canada's best known manufacturers. A few years ago it was merged with the J. R. Booth interests. The Eddy mills stretch along the turbulent Ottawa River, and the company's holdings extend to the Laurentian forest. It leases 5800 sq. mi. which produce 200,000 cords a year.

The Eddy Co. was there before the cities—one of the few instances where a pulp and paper mill stimulated the growth of a metropolitan area, part of which was to become a nation's capital. Ezra Butler Eddy founded the business nearly a century ago, and in 1882 when the original mill burned down he sent a telegram to Hull from Quebec that expressed a philosophy that has guided the enterprise. "Put out the fire," he ordered. "Clean up the debris. Prepare to build. Will be home tomorrow."

Key Officials for Eddy

Chairman of E. B. Eddy Co. is Garfield Weston, dynamic figure in Canadian and United Kingdom industry, still a comparatively young man, who made a fortune in the bakery business. Mr. Weston regards the E. B. Eddy Co. as one of his most important enterprises.

President of Eddy is R. A. Robertson, who recently succeeded W. S. Kidd. Vice president and general manager is A. Welch. Manager of manufacturing is D. G. Currie.

Top operating officials include D. G. McCrone, mill manager of pulp mills; R. T. Tournageau, mill manager of paper mills; L. Sterne, installation superintendent; T. Foulkes, chief plant engineer; K. F. Wrangell, chief design engineer.

Roschek Named For East Texas Pulp

Clarke H. Morian, Jr., general sales manager of East Texas Pulp and Paper Co. announces appointment of George A. Roschek as Eastern manager of sales.

Mr. Roschek will be located at a new sales office at 122 East 42nd St., New York 17.

Mr. Roschek was formerly with Leeds Sales Co. and previously with Hollingsworth & Whitney. He brings to East Texas experience in development and sales of converting papers and boards which, in addition to chlorine dioxide bleached kraft market pulp, will represent a substantial part of products.

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UNBLEACHED SULPHITE PULP

★ STRENGTH
★ COLOR
★ SERVICE
★ DEPENDABLE SUPPLY

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THEY GET HONORS AND NEW JOBS

THESE MEN TOOK TOP SPOTS at Montreal. At left, HARRY E. HADLEY, Gardner Board & Carton Co., President of the superintendents. Center, elected to line of succession as Fifth Vice President of the superintendents, was A. C. McCORRY, St. Regis Paper Co., Tacoma, Wash. Right, O. W. CALLIGNAN, Edgar Brothers Co., elected Chairman of the Industrial Affiliates.

An Ex-School Teacher Heads Supts.— And A Coating Pioneer Is Honored

AN EX-SCHOOL TEACHER who now holds down elected position of president of the Middletown, O., school board is the new "top man on the totem pole" in Superintendents Association.

Moving into position as "low man on the totem pole"—in five years he is slated to reach the top—is a West Coast superintendent who would rather play golf than eat, and whose country club attire is as flashy as some of his scores.

And there's a new head man in the Superintendents Affiliates, too—an ex-superintendent who spent 25 years building clay from a minor papermaking material to one of the most important.

Who are they? The answers—in this order—are Harry E. Hadley, A. C. "Ace" McCorry, and O. W. Callighan, known coast to coast as "Cal."

Tom Wolfe Is His Favorite Author

Mr. Hadley, the mill manager at The Gardner Board & Carton Co., Middletown, is the new president. His first mill job was on the screens and he soon gave up ideas of continuing as a school teacher. He was a superintendent just six months and became manager.

"A Foreman Stands Uneasily in No Man's Land" is the title of a plain-speaking article in PULP & PAPER's Feb. 1954 issue, authored by Mr. Hadley and based on a talk he made to Michigan superintendents.

As school board head this year he is also responsible for the welfare of 7,000 Middletown school kids.

A graduate of New York and Ohio schools, Mr. Hadley also attended the Institute of Industrial Arts at Gardenvale, Quebec, Canada. He came by papermaking naturally—his father, and father's father and all five brothers were papermakers.

His wife, Lois, attended her first superintendents' meeting at Montreal, but from her contact with a man who has been in the pulp and paper industry since 1921 she has complete understanding of its people. Mr. Hadley is uncle of Mrs. James L. Verdon, Huyck felts representative in the Midwest. Her late father, one of the Hadley brothers, was a superintendent.

Up Totem Pole They Go—

Officers

President: HARRY E. HADLEY, The Gardner Board and Carton Co.
First Vice President: HOWARD H. STREET, National Vulcanized Fibre Co.
Second Vice President: MARTIN J. AUCHTER, Charmin Paper Mills Inc.
Third Vice President: A. E. BACHMANN, Missisquoi Corp.
Fourth Vice President: H. E. WEHR, Mead Corp.
Fifth Vice President: A. C. McCORRY, St. Regis Paper Co.

Affiliates

Chairman: O. W. CALLIGHAN, Edgar Brothers Co.
First Vice Chairman: E. J. WARD, Cameron Machine Co.
Second Vice Chairman: HARRY HULMES, Lindsay Wire Weaving Co.

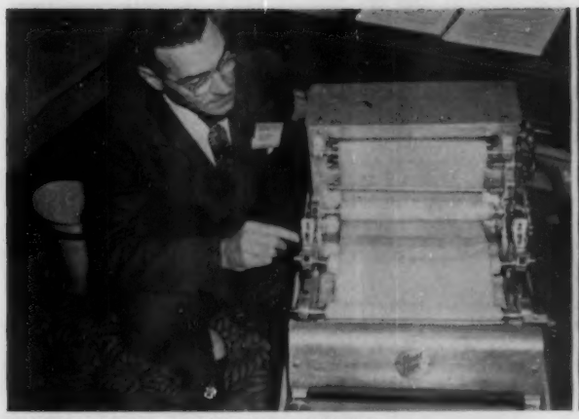
Mr. Hadley is an amateur astronomer, and he is a book collector of first editions. His favorite author and one of which he holds valuable collections is the colorful Thomas Wolfe.

McCorry Born In Wisconsin

Mr. McCorry, pulp superintendent at St. Regis Paper Co., Tacoma, Wash., is the man the superintendents picked as new fifth vice president, to take over five years from now. He is expected to lead the group in its first West Coast meeting since 1951. Mr. McCorry was born in Green Bay, Wis., in 1907. His first work in the industry was at Ontonagon Fibre Co., Ontonagon, Mich., where he spent two years in the laboratory before making a thorough indoctrination tour through the plant.

In 1928 Mr. McCorry joined Longview Fibre Co. at Longview, Wash., and then in 1936 went to Tacoma, Wash., as general foreman for St. Regis Paper Co. He has worked up from there through assistant superintendent to his present position, with one interlude in World War II when he was manager of two shipyards in Tacoma.

Mr. McCorry is, in effect, a "career man" in the superintendents organization. He has gone through all the offices of the Pacific Coast division and has represented that group at the national conventions on two occasions. The Montreal convention was his fifth in attendance,



SUPTS. LOOK AT NEW EQUIPMENT

(Left)—Mount Hope Machinery Co. had a complete scale model of its new felt preserver to replace whippers for Fourdrinier and cylinder machine felts. Walter Murray points to features.

(Right)—S. C. Rogers also had a scale model on display. This is "Sammy" its miniature knife grinder. Adrian L. Kennedy (left) Hammermill Paper Co. Superintendent, learns about equipment from A. R. Miller Jr., of Rogers.

What Superintendents Saw and Heard; Labor's Role Examined; Equipment Shown

THE COMMON GOAL of labor and management in the pulp and paper industry should be to achieve the highest possible production, and to submerge to a secondary status their traditional struggle of self-interest, A. E. Harold Fair, president, Alliance Paper Mills Ltd., told delegates to the Superintendents 35th annual convention in Montreal's Sheraton-Mount Royal in June.

Speaking at the opening session on "Operation: Management," Mr. Fair said there was no reason for management to fear that its authority was being challenged. That the main target of high production could come only through cooperation of union executives in enlightened planning with management towards this goal. It is necessary, first of all, Mr. Fair said, for the "man in the mill" to understand the goals of his company and the requirements of its customers.

Presenting the labor side was John P. Burke, veteran leader of the International Brotherhood of Pulp, Sulfite and Paper Mill Workers, from Port Edward, New York. Mr. Burke said greatest gain in this industry in the past 30 years has been in the changed attitude of management toward unions. This has been followed, he said, by wage increases, better working conditions, accident insurance and retirement plans—all of which were made possible by a change in management attitude.

Donald R. Dick, labor relations manager, Howard Smith Paper Mills, Ltd., presided at 1954 meeting and at the conclusion turned over the presidency to Harry E. Hadley, mill manager, The Gardner Board & Carton Co., Middletown, O.

New man elected to the stepladder of succession in the association was A. C. McCorry, St. Regis Paper Co., Tacoma, Wash., who moved in as fifth vice president. Elected with him to the board of directors were and he had the honor of heading the first tri-way meeting on the Pacific Coast of Tappi, the Superintendents and the Canadian groups in 1949. Mrs. McCorry, Cora, has been active in superintendents' affairs and likes golf, too. Their son, John Robert, is a veteran of Japan and Korea campaigns.

"Cal" Pioneered American Clays

New chairman of the Industrial Affiliates is Mr. Callighan, Edgar Brothers' roving ambassador. He is a native of Kalamazoo, Mich., a graduate of the University of Maine and the Institute of Industrial Arts, Gardenvale, Quebec.

Mr. Callighan is a veteran of World War I, and his first paper work was as chief chemist and assistant general superintendent at Allied Paper Mills at Kalamazoo in 1926-28.

He pioneered the use of domestic coating clays in the paper industry, which work began in 1928 with Edgar Brothers. This interesting story began at a time when American clays were of little importance in the industry, with English clays being used at a rate of about 100,000 tons per year.

American clays at that time were considered inferior in brightness and particle size. Development has proceeded to the stage where today these are considered competitive in every way, and clay volume now approximates 500,000 tons annually for machine and off-machine coatings.

Mr. Callighan sold the first advertising in the first Superintendents handbook, and has followed progress of the association from the beginning. His wife, May, whom he married in 1920, has been closely affiliated with his activities and an important associate in the industry for 35 years.

Mr. Callighan told PULP & PAPER that his real hobby is his work with this industry. He helped organize the Kalamazoo Valley section of Tappi, and was secretary-treasurer of the Michigan Superintendents Division and its chairman in 1950-51. He served with the affiliates committee first under Norman O. Weil and the past year as vice chairman under Burke Morden.

He helped organize the pulp and paper department at Western Michigan College and maintains an active interest in sponsorship work for this fast growing paper technology school.

GETTING DOWN TO BUSINESS

MONTREAL CONVENTION staged nine separate panels for operating-procedure discussions.

(Left) Chemical Pulping session was headed by MARTIN J. AUCHTER, Mfg. Vice. Pres. of Charmin Paper Mills, and R. M. BISHOP, Hercules Powder Co. Panel discussed high density bleaching; kraft odors; and sulfate engineering.

(Center) High-Yield Pulping session had as participants, from left, JAMES COGHILL, Curlator Corp.; C. W. CONVERSE, Sprout, Waldron & Co.; A. H. ADAMS, The Bauer Bros.; L. M. SUTHERLAND, Sutherland Refiner Co.; and CARL BRINK, Hermann Mfg. Co.

(Right) Paperboard session included discussion of tension regulators, and shown here in action are R. C. BERGER, General Electric Co. (with pointer) and E. L. STENTZ, of The Ohio Boxboard Co.

Glen Sutton, Sutherland Paper Co., and Roy Zellers, Chillicothe Paper Co.

For the affiliates organization, O. W. Callighan, Edgar Brothers Co., was elected chairman, succeeding Burke Morden, of Morden Machine Co.

Cincinnati's Netherlands Plaza was chosen for the 1955 convention —dates June 14-16, and Lake Placid, N. Y., was fixed for 1956.

LEADS SEMI-CHEM EXPERTS

L. W. MURTFEIDT, Pulping and Bleaching Supt., Consolidated Water Power & Paper Co., was Chairman of two discussion sessions on High Yield Pulping. Thirty of the 139 superintendents at Montreal attended these meetings.

Management-Labor Harmony

The new rapport between management and labor was emphasized, by both Mr. Fair and Mr. Burke. Mr. Fair stressed a need for more production to support North America's expanded economy, and said this could only come through cooperation between labor and management.

Leadership must be provided by management men, he said. "Back in the twenties, the mill manager and superintendent were interested more in the direct problem of production than in industrial relations and company policies. Today the average superintendent or mill manager is as much an executive as a papermaker. His duties have shifted to being more an administrator of policy and a director of people than a skilled supervisor."

Mr. Fair said the policy of understanding does not stop with management at the foreman level, but must be transmitted through junior supervision right to the man on the job. "The average workman will do a good job if he knows what is expected and why."

Mr. Burke predicted a bright future in his talk on "Labor Looks Ahead to 1964." More mills were envisioned, with greater production and with shorter working hours and better social benefits for labor. All this is possible, he feels, as a result of the changed attitude of employers.

Mr. Burke recalled early struggles, strikes and bitter strife which took place in the industry for almost 30 years. He recalled a strike in a mill of International Paper Co. that began May 1, 1921 and lasted five years. It resulted in wiping out union locals in all I.P. plants. This was followed, however, Mr. Burke said, with an open shop agreement from 1931 to 1937, at which time a change in relationship resulted in a union agreement covering all I.P. divisions. This company's "enlightened management and labor relations has extended through the years since," Mr. Burke said.

Mr. Burke said in a free society it is the joint responsibility of management and union executives to make collective bargaining work for the benefit of all. He called for an understanding of social responsibility involved in negotiations.

Merger of Unions Progresses

Mr. Burke told PULP & PAPER, following the meeting, that progress is being made on the proposed amalgamation of the International Brotherhood of Sulfite and Paper Mill Workers with the Papermakers Brotherhood. A joint committee consisting of three executive members from the board of directors of each of the two unions has been considering amalgamation plans and will report back to their executive boards next January.

(If the plan proves acceptable to the executive boards, it will then be submitted to the local unions for internal discussion, preceding a vote by the membership on adoption after a 6-months' period. This would time the merger for midyear 1955).

Woodpulp Still King

Interesting sidelight of the Montreal superintendents' meeting was the statement of Carl L. Hackbarth, general superintendent of Sociedad Agricola Paramonga, Supe, Peru, that bagasse, bamboo, abaca, esparto or straw as substitutes for making paper are strictly possible economically only for local operations—and

UNIONS MAY MERGE IN '55

LABOR AND MANAGEMENT VIEWPOINTS were presented at Montreal by John P. Burke (left), International Brotherhood of Pulp, Sulfite and Paper Mill Workers, and A. E. Harold Fair, President, Alliance Paper Mills Ltd. Mr. Burke told PULP & PAPER that AFL pulp and paper unions may be merged by mid-1955.

At left: Engineer's model of the Ketchikan Pulp Company's mill, now nearly completed, at Ketchikan, Alaska.

Alloy-lined shells for the digesters being assembled on the mill site by A.O. Smith welding crews.

Alaska's first pulp mill features six SMITHlined 17′ x 58′ Digesters

Alaska's first pulp mill has the distinction of being the largest field assembly job of welded sulphite digesters ever undertaken for a paper mill. It comprised erecting six 17-foot diameter by 58-foot high pulp digesters. Each is SMITHlined with two alloys, one to prevent corrosion by the liquor, the other to solve vapor corrosion problems in the digester domes.

The ring sections, heads, cones and skirts were all shipped from Milwaukee in halves, using the rails to Prince Rupert, B. C., and barges from there to Ketchikan.

This installation reveals the capacity of A. O. Smith to help any paper mill, large or small, to solve its digester corrosion problems. It also demonstrates the flexibility of the exclusive SMITHlining process. Two different types of alloy linings are resistance spot-welded to the carbon steel backing. In this instance, type 316L stainless is the lining in contact with the liquor, and Hastelloy alloy F, the lining in the vapor area in the dome. SMITHlining is the only commercial, automatic process for applying Hastelloy alloy F to carbon steel.

Our metallurgical engineers conduct exhaustive research and testing programs for the paper industry to secure reliable data on the corrosion rates of alloy materials for digester service. As a result, they were able to provide data on the alloy most suitable for resisting each type of corrosive attack in the Ketchikan digesters.

After the digesters have been in service, our metallurgists will make two periodic inspections with mill personnel to train them in making future inspections. This is a service we render our customers on the digesters we manufacture so that they will be able to evaluate any changes in the surface of the alloy due to process variations, and reduce maintenance to a minimum.

Let A. O. Smith engineers assist you in solving your digester problems. Their experience in this field is without parallel.

Through research ...a better way

A.O.Smith

CORPORATION

PROCESS EQUIPMENT DIVISION

MILWAUKEE • HOUSTON

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are only possible in dollar-short sugar-producing or other countries that have available large quantities of these raw materials.

Mr. Hackbarth's company produced 17,000 metric tons (18,700 short tons) of paper in 1953 and expects to up this to 19,000 tons (21,000 short tons) in 1954. But in spite of this, he does not consider the material a serious competitor to woodpulp in manufacture of paper.

High Yield Gets Attention

Thirty of the 139 (see Box Score) superintendents and mill men at the convention attended the whole-day session on high-yield pulping which operated under joint chairmanship of L. W. Murtfeldt, Consolidated Water Power & Paper Co., and Lionel M. Sutherland, Sutherland, Sutherland Refiner Corp. It was one of the best-attended small meetings.

This session covered refiners and refiner techniques; cooking; chip size; screening; refiner feeding; pressing of liquor from semi-chemical chips; difficulties in washing; centrifugal cleaning; sodium recovery; automatic control; bleaching, and wood yields. The principal accomplishment in the opinion of experts was that the meeting brought together for perhaps the first time the supply people directly concerned as well as the key mill men using the equipment and procedures.

Those taking part included: C. W. Converse, Sprout, Waldron & Co.; A. H. Adams, Bauer Bros.; James Coghill, Curlator Corp.; Frank Hayes, Noble & Wood; and Carl Brink, Hermann Mfg. Co. Mill men included: Horton Girdler, West Virginia Pulp & Paper Co.; Elliott Heslop, Abitibi Power & Paper Co.; Howard Wehr, Mead Corp.; O. A. Marrow, Riegel Carolina Corp.; R. G. Knechtes, American Box Board Co.; E. J. Barney, Cornell Paperboard Products Co.; and Mr. Murtfeldt.

Crocker Announces Bolton Award Winners

A highlight was announcement of the Seventh Bolton Award contest winners by Samuel E. Crocker, Jr., of John W. Bolton & Sons, Inc. Winner was Edward L. Lincoln, S. D. Warren Co., Westbrook, Me., for what was adjudged the best paper on "Obligations of an Employe to his Company." Other national winners for 1954 were Robert L. Miles, Gardner Board & Carton Co., and James A. Mann, Congoleum-Nairn, Inc.

Mr. Crocker said that this subject was chosen because of the fine papers in a preceding contest on "Obligations of a Company to its Employes." Mr. Crocker pointed to growing interest in the contests, and the feeling that it was performing a real service.

A NEW PAPER PRODUCT-GOOD "TEAR!"

NEW USE FOR OLD NEWSPAPERS was demonstrated at Montreal by CHAS. KELLEY JR., of H. Waterbury & Sons. Men's shorts have reproductions of newspaper front pages in full pattern.

Cincinnati in '55; Lake Placid in '56; Then Guess Where Supts. Will Go?

THE SUPERINTENDENTS ASSOCIATION has made an unusual decision. It not only has picked the Netherlands Plaza Hotel in Cincinnati for its convention in 1955. It also already has contracted for the 1956 convention—at Lake Placid Club, Lake Placid, N. Y.

The dates are fixed for both: June 14-16, 1955 at Cincinnati. June 12-14, 1956 at the upper New York sports center and resort.

Want to get in a guessing game, and go the Superindents four years better?

The convention usually is near the mill of the member who becomes president. So, Cincinnati was chosen because Harry Hadley of Miami Valley will preside. But the "rule" was broken for Howard Street's year—1956. His mill is in Delaware and Philadelphia (not Lake Placid) seemed "logical."

You get another break, besides the proximity "rule" if you play the guessing game. There aren't many towns or hostelries that can handle a minimum of 600 delegates. So here goes:

1957—That's Marty Auchter's year and his home town, Green Bay, Wis., is too small. The Edgewater Beach Hotel, Chicago, is a good guess. Or Mackinac Island, Mich., Milwaukee, or Minneapolis.

1958—Al Bachmann is due to preside and a good guess is Poland Spring, Maine. Or Boston wouldn't be too far from his Vermont mill.

1959—H. E. Wehr, Mead's Harriman, Tenn., division manager, is due. This "points" to the Andrew Johnson Hotel in nearby Knoxville. Chattanooga, Nashville, and Ashville and the "Smokies" are near. And so are a lot of mills, old and new, worth visits.

1960—Election of the newest v.p., A. C. McCorry of Tacoma, means the head men want to go back to the Pacific Coast that year. Portland, Ore., probably the Multnomah Hotel again, is the best bet. It is near a lot of mills.

The last Superintendents Convention in Portland—1951—was the big-

ALSO ON VIEW

A. E. Broughton & Co. S-10-H shower was demonstrated by JOHN A. BEALS to ROBERT ST. ARNAUD, of Davidge & Co. Ltd., Canadian representative for the company.

gest in its history, with 888 registered. About 1,000 attended the last ball. Seattle, Victoria, B.C., Sun Valley, even Las Vegas will be mentioned, but wise money will be on Portland.

There Were 139 Men From Mills at Montreal

Unofficial tabulation of attendance at the Montreal Superintendents Convention showed 640 registered, as compared with 605 at the Atlanta 1953 meeting.

The record for this association is 888 at the Portland, Ore., 1951 National. Next best was 680 at Chicago's Edgewater Beach Hotel in 1950. About 600 has been normal since the war, although Detroit in 1952 dipped much lower.

Box score breakdown on Montreal and Atlanta attendance:

	1954	*1953*
Total	640	605
Men	491	490
Women	149	115

Here's a further breakdown on Montreal:

Total attendance	640
Mill men	139
Supplies, other men	352
Women	149

That West Coast convention was remarkable because a United Air Lines strike had caused many cancellations. All told, there were 194 cancellations! About 85% were apparently due to the strike.

How Engineering Aids Mill Operators

By Gerald F. Alcorn

Construction Engineer, Pulp Div., Weyerhaeuser Timber Co.

GERALD F. ALCORN, the author, now heads his 3rd big kraft project for Weyerhaeuser—new machine going in Longview.

For More Details

THE JAN. 1954 issue of PULP & PAPER carried an exclusively prepared article describing one of the most unusual bleached kraft pulp mills ever built—with facilities to make dissolving and paper pulps of high quality—and yet not requiring a single additional acre of trees to be cut. It is Weyerhaeuser's new Everett, Wash., mill, supplied by its sawmill leftovers and previously worthless Tree Farm products.

Gerald F. Alcorn, construction engineer, assisted PULP & PAPER with that article. Here are excerpts from an address he made at the Montreal Superintendents Convention. His entire address is not published because many points were covered in our Jan. 1954 story—thanks to him.

SUCH ITEMS as motor lists to determine power requirements; flow sheets to determine motor lists; and physical layouts came along simultaneously, undergoing a continuous revision according to ideas expressed by members of the organization until layouts became definite.

Orders were placed with a structural steel fabricator for an estimated tonnage, on a per pound price for the earliest possible delivery. Next scheduling consisted of getting out foundation drawings to enable the contractor to complete all foundations and ground floors ahead of arrival of steel.

The pulp drying building was closed up as soon as possible and temporary heat installed to permit machine erection. Other buildings were not closed as fast. The recovery building was not closed until the boiler was completely erected.

The project engineering office was located at the job and the majority of work was handled at this location. Purchasing of capital equipment was handled by the engineering office at the job. The policy was followed of buying the best equipment that we knew of and stringently economizing on space and service facilities.

Power and recovery units were placed around a central operating point, elevated so a common operating level was achieved. Operating points for the recovery furnace, power boiler, turbogenerators and evaporators are within a 50 foot radius.

How Staff Work Was Aided

This grouping permits the operating personnel of highest skill to be in close proximity with lower skilled jobs. This has turned out to be a great aid to supervision and permits the supervisor to spend more time in meetings and conferences.

An electrostatic precipitator is located above the cyclone evaporator. This permits recovered salt cake to move downward without benefit of conveyors. The entire mill water supply is passed through a thoroughfare condenser. This permits warmer water to be used in the pulping process and relieves the necessity of cleaning condenser tubes.

An Engineer Says "Thanks" to Operators

Expressing "deep gratitude" to operators for smoothly starting up Weyerhaeuser's Everett kraft mill, Construction Engineer Gerald F. Alcorn said at Montreal:

"I have heard it said a doctor buries his mistakes, while an engineer lives with his. It could also be said that concrete can cover a lot of engineering mistakes.

"It is my feeling that sweat, toil and (if not tears) some unprintable words of operating personnel, also covered up mistakes." (If any, they were minor.)

Electricity is generated and distributed at 13.8 kv. to fifteen 1000 KVA unit substations. A single secondary voltage (550 v.) permits all transformers to be duplicates and permits a secondary selective system to be used, giving considerable flexibility in case of trouble at any point. Contrary to our past practice, a grounded neutral system was used. The system has proven itself. During the past 9 months there have been four interruptions of power to certain sections but the power has never been off the entire mill. Motors as high as 500 HP are operated on this voltage.

In the pulping group the same principle of concentrating the operating functions around a central area was carried out. Six digesters are adjacent to, and with a common operating floor, as brown stock washers and bleach washers. Brown stock screens and bleach liquor making are on a floor 20 feet below.

A problem with washers is solved

It is the writer's experience that the start up of brown stock washing system always suffers from lack of experienced operators. By placing the brown stock washers on the same floor as the bleached stock washers and, thereby following the same practice as in the power group, the highest paid and most experienced man in the department be-

Continued on page 98

Get them into the open fast!

Oliver "OC-3" with winch and front-end loader skidding logs.

The maneuverability of the Oliver Industrial "OC-3" crawler is amazing in tight spots. In fact, its unusually high clearance, power (21.85 drawbar h.p.) and controlled differential steering, enable you to work in mud, over stumps, ruts...places an ordinary tractor would be useless.

The long track life, simple design and durable construction of the "OC-3" keep you working longer, producing more. Lower track wheels are lubricated and sealed against damaging dirt and water ...insuring long, trouble-free service and low maintenance. Outfitted with bulldozer or loader, the "OC-3" becomes a useful tool for clearing, backfilling, loading loose material and performing many other profitable tasks.

Try the "OC-3" on your work, under your own conditions. Your Oliver Industrial Distributor will be glad to show you what a real performer the "OC-3" really is. Call him today for a trial run!

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel and crawler tractors

Fastusols®
for minimum two-sidedness

A complete range of non-dusting, fast to light dyestuffs, the FASTUSOLS generally produce shades of the highest degree of non-two-sidedness and therefore are of particular interest for coloring all high-grade papers, sulphite bond, ledger and cover papers. All these brands may be added dry to the beaters without showing color specks.

In addition to these valuable properties, most of the dyes in this class are readily bleachable with chlorine for simplified reuse of broke, while some which are not bleachable are of interest for record papers such as ledger, where fastness to ink-eradicator is desirable.

GDC dyes backed by prompt deliveries and skilled technical service will provide the answers to all your paper coloring problems.

Write or call our nearest sales office.

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American 375 Crawler Cranes. These rugged, completely mobile crawler cranes work smoothly and economically under varying site conditions. Hour for hour, load for load, American cranes outwork, outproduce anything in their field *with less maintenance cost!*

American DiesELectric Locomotive Cranes. Unquestionably the leader in locomotive cranes. American's 25- to 80-ton locomotive cranes put diesel efficiency into your pulpwood handling operations. Operating records prove that an American DiesELectric Locomotive Crane *will write off its own cost in five years!*

American 750 Crawler Cranes. Engineered for extra capacity, these big capacity crawler cranes add production hours to your day. Again, this means *on schedule* production and lower costs for American owners.

TRACKS or TREADS?

Either way, your best answer is AMERICAN!

Of course, your yard is different. Your loading, unloading and storage problems are unlike those of any other yard. So, you need a crane—whether locomotive or crawler—that is suited to your particular needs and will cut your costs to rock bottom. That's where American fits into your picture . . . for whatever your needs, there's an American built for you!

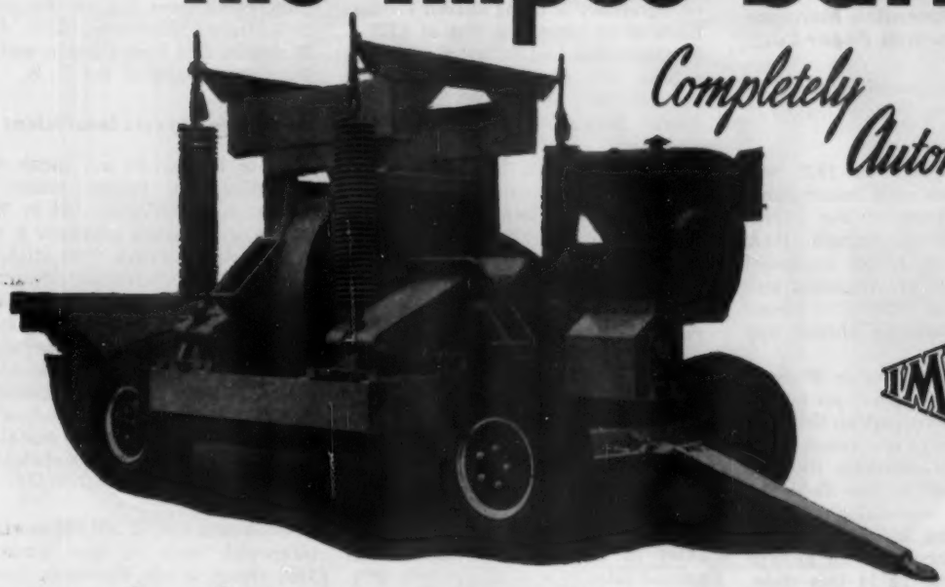
American Hoist

American Hoist & Derrick Company
St. Paul 1, Minnesota

Introducing

the Impco barker

Completely Automatic



IMPCO

Easily handles irregular shaped logs!

The Impco Barker has been developed to meet today's high bark removal requirements combined with low wood loss.

It is available as a stationary unit for general wood yard barking or as a portable unit mounted on a heavy frame equipped with tires for highway towing. The mobile unit can be furnished with a self-propelling drive for moves between barking sites.

Capacities up to 20 cords per hour depending on conditions, size and type of wood can be expected.

SPECIFICATIONS:

Wood size—4′ to 8′ in length
4″ to 18″ in diameter
Feed Rate—30 to 120 f.p.m
Infeed and Outfeed Conveyers—Automatic, self-centering, self-sizing
Barking Tools—6 springloaded—automatic sizing for variable log diameters
Bark Discharge—Mechanical ejection
Drives—Gasoline or electric powered

IMPROVED
MACHINERY INC.
NASHUA, NEW HAMPSHIRE

Sherbrooke Machineries Limited, Sherbrooke, Quebec Manufacture similar equipment in Canada

F 1-a

Industrial Forestry Makes Big Strides in Wisconsin

By F. G. Kilp
Woodlands Operation Manager
Nekoosa Edwards Paper Co.

From a report prepared for the Wisconsin Conservation Dept.

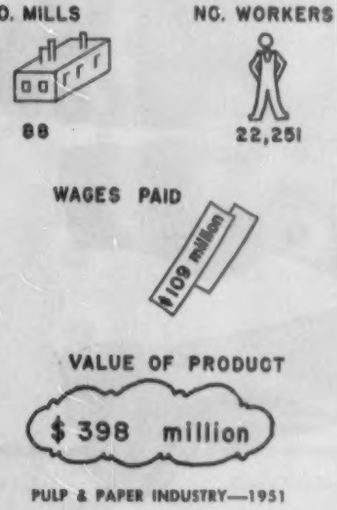
INDUSTRIAL FORESTRY in 1928 was still looked upon with considerable skepticism by some of our industrial leaders even though their plants' very life blood depended upon the forests of Wisconsin and the Lake States in general for a continuous and profitable annual operation.

Even though we have in Wisconsin today definite signs of an industrial forestry movement on the part of some large pulp and paper mills as well as a few sawmills, there is still much room in this field for more. This is especially true of small wood-using industries.

If we are to encourage the growth of industrial forestry in this state, we must provide some basic facts in connection with our timber resources. This information can be obtained in a reasonably accurate manner through a timber inventory. Thus, we can then determine what we have to work with on a statewide basis.

An undertaking of this kind was recommended by the Forestry Advisory Committee to the State Conservation Commission in 1949 and it was approved by the Commission in 1950. The cost of this forest inventory is being shared on the basis of an estimated cost of $375,000—counties and industry to contribute 30% of $112,500 each and the state 40% or $150,000. The U. S. Forest Service will inventory its own lands.

Wisconsin has a large and very important investment in its wood-using industries from many angles. They contribute heavily to this state's prosperity today and will continue to do so in the future.



PULP & PAPER INDUSTRY—1951

Pulp and Paper in Wisconsin

Take a look at the pulp and paper industry alone, since it has greater plant investments than all other wood-using industries combined in Wisconsin today.

Wisconsin's pulp and paper industry ranked first in 1951 (the last year statistics by states were available) in value of investment and annual sales.

Now let us look back past the turn of the century (1900) and see what advantages Wisconsin offered to this industry at that time. Basically, there were several important natural advantages which encouraged the industry to locate and build in Wisconsin and to engage in competition with other mills outside the state: An abundant water supply, reasonably cheap power and, most important, a cheap and choice wood supply.

Let us look at the facts in relation to what portion of the industry's total wood requirements Wisconsin is supplying from its own forests today. The 1951 production of Lake State's pulpwood amounted to 2,577,000 cords in the largest annual cut in the history of the region. Following the pattern of other years, Wisconsin accounted for only 22% of the *total regional* cut, while Minnesota continued to be the largest pulpwood producing state in the region accounting for 42% of the total regional cut and Michigan second accounting for 36%.

Wisconsin, on the other hand, is the largest *consumer* of pulpwood. The 550,534 cords produced in Wisconsin in 1951, represented 26% of the total wood used to satisfy the requirements of the state's paper industry. Almost three-quarters of the wood used by Wisconsin's mills, then, came from outside the state: 20% from Minnesota, 23% from Michigan, 23% from Canada, and 7% from other parts of the U. S.

Wisconsin Forests Insufficient

These figures do not speak well for Wisconsin forests today. Of course, some mills located in Wisconsin will always purchase a part of their requirements from Michigan because of a freight cost advantage. It is doubtful if Wisconsin will ever be able to furnish all of its mills' present-day spruce requirements. Why? Because it is questionable if there is today enough spruce-type forests in Wisconsin to produce an annual cut under good sustained yield forestry practices, sufficient to satisfy the annual requirements of the mills.

What is a cut of 550,534 cords of pulpwood, such as took place in 1951, doing to our Wisconsin forests today?

In the table we may compare the allowable annual cordwood drain of several of the major pulpwood species with the actual cut of these species in 1951. The allowable annual drain is computed for the 20-year period from 1946-1965; it represents that portion of the annual growth which can be cut and still provide a satisfactory build-up of the growing stock.

Species	Allowable Annual Drain 1946-1965	1951 Actual Cut	Difference Cords
Spruce	15,000	30,103	+15,103
Balsam Fir ..	45,000	54,377	+ 9,377
Hemlock	60,000	51,329	— 8,671
Jack Pine ...	55,000	98,461	+43,461
Aspen	350,000	270,194	—79,806
Totals	525,000	504,464	

Here we find some wide variations. On the basis of these allow-

Source of Pulpwood used in Wisconsin—1951 (in percent and cords)

60 SECONDS AGO..

THIS ....WAS A 40' LOG with a 40" BUTT-DIAMETER entering a

SUMNER 175" CHIPPER!

This demonstration of speed, precision and dependability is typical of the numerous SUMNER Chippers of all sizes to be found in pulp, paper and board mills in all parts of this country, Canada, Australia and New Zealand.

In addition to this 175" round-log Chipper — which produces nearly 400,000 units of chips annually — SUMNER manufactures a 153" Chipper for up to 32" butt-diameter logs; a 112" Chipper for small logs and cants; 36", 53", 66", 72" and 84" wastewood Chippers; a 36" Re-Chipper; and a 66" Veneer Chipper.

SUMNER thus has a Chipper for every requirement. Detailed information on all SUMNER equipment will be gladly sent on request.

SUMNER IRON WORKS
Since 1892
EVERETT, WASHINGTON

able drain figures, it very definitely could be stated that Wisconsin is over-cutting its spruce, balsam and jack pine forest types at an alarming rate and under-cutting its aspen and hemlock forest types. With the possible exception of spruce, it would be difficult today to obtain an agreement among foresters and owners operating forest properties that they are over-cutting their jack pine and balsam forest types.

The state forest inventory of the 32 northern and central counties should be completed within two years' time. Therefore, by 1955 we should have most of the answers to our complex forest growth problems.

Gains Since 1928

What gains have we made in industrial forestry since the Commercial Forestry Conference of 1928? It is doubtful if on that date 50,000 acres had been previously dedicated by the wood-using industries of Wisconsin to the growing of a forest crop on a sustained yield basis to supplement their mill requirements. It was not until late in the 1930's and early 1940's that industrial forestry began its steady climb upwards.

Today close to three-quarters of a million acres, privately owned by industry in Wisconsin, have been dedicated and are being maintained for permanent tree growth under standards approved by the Wisconsin Conservation Department. Of this acreage about 130,000 is held by saw mills, the balance is owned by pulp and paper mills.

Close to 50,000,000 trees have been planted on those acres needing artificial reforestation. Industries owning these properties have made substantial investments in forest fire detection and suppression equipment which naturally supplements state equipment for emergency purposes. It can be truthfully stated that a high degree of respect and cooperation exists between private industry and the Wisconsin Conservation Department from the top to bottom of their respective organizations.

A Look at the Future

What does the future hold in store for industrial forestry in Wisconsin? Naturally there exists, as would be expected, a very diversified opinion on the subject. Those industries which have made large investments in forest land and timber properties are optimistic as would be expected. In this day of costly transportation, it appears rather clear the closer you can tie your wood supply to your manufacturing plant the cheaper your raw product will be in the future.

For many years past we have been drawing our necessary raw product supplies from nature's vast heritage. That was a cheap supply of the past which has been completely exploited today except for a few small remnants. We should be sensible by this time and realize our timber supplies must be grown like other crops of the land, which means somebody is going to pay the bill for growing them. Transportation costs are bound to have a great and deciding influence on the cost of our raw product supplies in the future. Therefore, those industries which have recognized these facts as basic and have planned for the future will enjoy the long-lasting prosperity that is sound industrial foundation. *These accomplishments are only obtained by a sacrifice of dividends today for the reward of tomorrow.*

It does not take a technically trained forester to recognize what has happened to our cut-over and burned forest lands in the past quarter century. The young forest growth that covers these lands today can be attributed to good fire protection which we have here in Wisconsin. The many millions of trees we, the people, have planted on these lands is but a drop in the bucket compared to nature's great work in making repairs through natural regeneration. Of course, we have helped her as stated before by providing good forest protection.

Insect damage to our forests today is a greater menace than fire and this is a state responsibility that cannot be shirked. We expect the state, and rightly so, to accomplish in this field what has been accomplished in forest fire protection and it's high time to start making big strides in that direction. Reports from our Western states indicate that insect losses during the past 10 years have run into many billions of feet of high grade timber. Let us not experience such tragic losses in Wisconsin.

We are not too far away from the day when Wisconsin's forests will support the pulp and paper industry with the possible exception of its spruce requirements. The picture is different in respect to the hardwood demands on the part of the veneer and saw mills manufacturing high grade material.

2-Way Radio Works Well on Tractor

SIMPLIFICATION OF contact between fire fighting crews and the balance of the organization through the control towerman has been effected by personnel of Louisiana Forestry Commission through successful mounting of a 2-way radio on the fire-line plowing tractor. According to an announcement by James B. Mixon, Louisiana State Forester, the radio is mounted securely on the tractor, subject to control from there or the carrying truck when en route or returning from a blaze.

Fine points of the set-up were worked out by Al Vendt, Commission communications engineer, with aid from George Waggoner and R. S. Bennett, radio engineers. Previously, if the crew wished to communciate with the towerman it was necessary for a member to return to the truck. Since this might involve calls for additional help, the time lost in traversing the woods is valuable.

The new arrangement is for the Motorola 41-V to be mounted in a special weatherproof and practically damage-proof ten gauge steel cabinet. Four bolts hold the assembly to the John Deere crawler type tractor.

VIEW OF MOTOROLA 41-V radio mounted on fire control John Deere crawler type tractor in Rapides Parish, La. Loudspeaker can be partly seen facing driver, so it drowns out tractor noises.

As used in Rapides Parish, the crew rides to the scene of the woods fire, unplugs the wire from the truck control set and plugs in on the tractor, and away they go. The engineers have it rigged so that if the control wire is not unplugged from the truck, tractor motor won't start.

You won't know how easy defoaming can be till you use NOPCO LIQUID DEFOAMERS

One sure thing about *all* paper processing is that you must find the best way to eliminate foam. And now Nopco presents, as the ultimate result of its years of research on foam prevention, the LD Series of liquid defoamers. You'll gain their greatest advantages by using them in the continuous emulsion system—but no matter how you use them, you'll find these LD defoamers do a most effective job, and eliminate many of the time-consuming tasks you used to think had to be done.

Nopco LDC, LDF, and LDV offer all the advantages that come with effective foam control, including improved drainage on the wire which permits higher machine speeds and—above all—a higher quality sheet. These products disperse very readily to form nonionic emulsions. Nopco LDC works well on many of the most troublesome grades of paper and on other difficult defoaming problems in the pulp mill. LDF has been successful on cylinder machines in board mills. LDV, a low cost formulation, has a cloud point of 28° F., a fact of interest to those who make paper in a cold climate.

Since Nopco makes also the famous KF Series of paste defoamers, our technical representatives can give you completely impartial advice—help you find the defoamer which works best in *your* mill, for your sheet of paper. Write today for testing samples and full information.

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CHEMICAL COMPANY
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Another "Beat" for *PULP & PAPER*

PULP & PAPER carried the first news of the startup of three dissolving market pulp mills—Ketchikan Pulp Co., in Alaska, Rayonier Inc. in Georgia, Buckeye Cellulose in Florida. All three—amazingly started up steady production within a few weeks of each other. And, in each case—PULP & PAPER was there!

Now the 1954 WORLD REVIEW NUMBER of PULP & PAPER is out—scoring another great "beat"—with exclusive and authoritative articles which analyze the real importance of these new mills in the whole world market picture. Be sure to get your WORLD REVIEW NUMBER—the only volume of its kind published anywhere in the world. ($2, single copy, or included in subscription).

Other New Mills Starting Up

As this issue reaches your hands, another big new mill is running: Bowaters Southern Newsprint Co.—with two big Beloit high speed newsprint machines and substantial market kraft pulp production in excess of that used as furnish for newsprint. This $57,000,000 plant at Calhoun, Tenn., is the biggest single investment ever made in the history of this industry.

Also now, just starting—Valentine Pulp & Paper Co. in Louisiana, making pulp and, perhaps, newsprint from cane bagasse.

Startup of the new Rome Kraft Corp., Rome, Ga., a big board mill, has been delayed until late in the year.

East Texas Pulp & Paper Co., making foodboard and bleached kraft pulp for market, is rushing to an Oct. 1 production deadline.

All of these projects are discussed in the WORLD REVIEW NUMBER.

And watch for PULP & PAPER's owned detailed stories in near future issues!

Bowaters Mill Now Making Newsprint

The $55,000,000 Bowaters Southern Paper Corp., Calhoun, Tenn., British owned and biggest single mill investment ever made in continental U.S.A., has started up regular operation. It had already shipped 3,000 tons of kraft pulp by June 25. It is now also making newsprint.

Two high speed Beloit newsprint machines with General Electric drives and Ross hood and air system will aim for 130,000 ton years. A Ross Engineering pulp dryer, with Reliance drives and Lamb-Grays Harbor and Washington Iron Works finishing and baling, aims at 50,000 "surplus" tons a year of bleached and semi-bleached kraft which may go to market or other Bowater mills.

Other equipment includes: Combustion Engineering power-bark-recovery boilers, Impco bleaching, washing and screening equipment, Link-Belt log turntable, gantry cranes, trippers, conveyors, etc., Chain-Belt log and chip conveyors, Goslin-Birmingham evaporators, Sprout-Waldron refiners, Stebbins tile chests and digester and other linings, Nash vacuum pumps, DeLaval oil system and Midwest-Fulton drainage on machines, E. D. Jones & Sons jordans and broke processing, Bird screens and Dirtecs, Hanchett knife grinders, Fuller Airveyors, Foxboro, Fischer & Porter, Bailey, and Bristol instruments, Fairbanks-Morse, Ingersoll-Rand, Allis-Chalmers, Oliver, Worthington and Warren Steam pumps, A-C chip screens, Fibre-Making Processes barkers, DeZurik regulators, Earl Paint Co. tank insulation and protective coatings, Chicago Bridge tanks, Carthage chipper, Dorr causticising system, Merrick Weightometer, Yarnall-Waring blow valves, General Electric turbogenerators, and G. E. and Westinghouse miscellaneous electrical equipment.

J. E. Sirrine Co were consulting engineers.

K. O. Elderkin is vice president and general manager and Vic Sutton is mill manager. Mr. Elderkin came from Crossett, Mr. Sutton from Bowaters in London and previously, Newfoundland. Both started in Canada.

Scott Takes Over One Mill; Gets 50% of Another

Thomas B. McCabe, president of Scott Paper Co., and George N. Carleton, president of Detroit Sulphite Pulp & Paper Co., Detroit, Mich., announced July 19 that the two companies had entered into an agreement under which Scott is to acquire Detroit Sulphite by stock exchange. Scott, a few days later, acquired 50% of Westminster Paper Co., tissue mill in New Westminster, B. C.

Champion Spending $8,000,000 on Mills in Year

Champion Paper & Fibre Co. announces it will spend about $8,000,000 in the year that began Mar. 31 in capital plant improvements.

In the year ended last Mar. 31 it spent $9,213,000 on its three mills—Canton, N. C., projects were a new hardwood bleach plant, new bark burning boiler, new lime kiln; at Hamilton, O., rebuilding of one machine with installation of on-machine coating, expansion of cast coated paper production, and paper machine improvements; at Houston, Tex., an added digester, added evaporator, additional bleach stage in one bleach system and added pulp washing capacity.

New World Record For Newsprint Speed

A new world's speed record for a newsprint machine was set by Powell River Co.'s No. 8 June 17—2001 feet per minute.

The previous record was held by Quebec North Shore Paper Co., Baie Comeau, Que.,—1910 fpm.

Until recent installation of a Millspaugh vacuum transfer, Powell River's No. 8 had barely exceeded 1700 fpm. No. 8 was built by Dominion Engineering Co. It has Harland drives.

First announcement that several Canadian companies were installing vacuum transfers to eliminate couch breaks was made in March PULP & PAPER. They are Canadian International, Powell River, Consolidated, Elk Falls and Quebec North Shore.

Most pioneering in this development was carried out at the Crown Zellerbach mill at Port Angeles, Wash., in close co-operation with Beloit Iron Works. John Inglis and Dominion Engineering, in addition to Britain's Millspaugh, have been installing vacuum transfers.

AT POWELL RIVER CO'S British Columbia mill, this roll was produced at the rate of 2,001 fpm. Here's the champion crew (left to right): Backtender PAT THOMPSON, Winderman STAN RICHARDSON, Roll-pusher ALLAN McTAGGART, Boss Machinetender FRED CHURCH, Fourth Hand EDWARD LINS, Acting Supt. ALF HANSEN, Machinetender GIL MASLIN, Spare Winderman JOHN BUTLER, Fifth Hand JOHN TESCH, Spare Boss Machinetender BILL McANDREW, Broke Hustler KARL GISLE.

first cousin to magic

Equip that old dryer with the correct Fulton Drainage system and you'll be as quick as others to call the benefits magic.

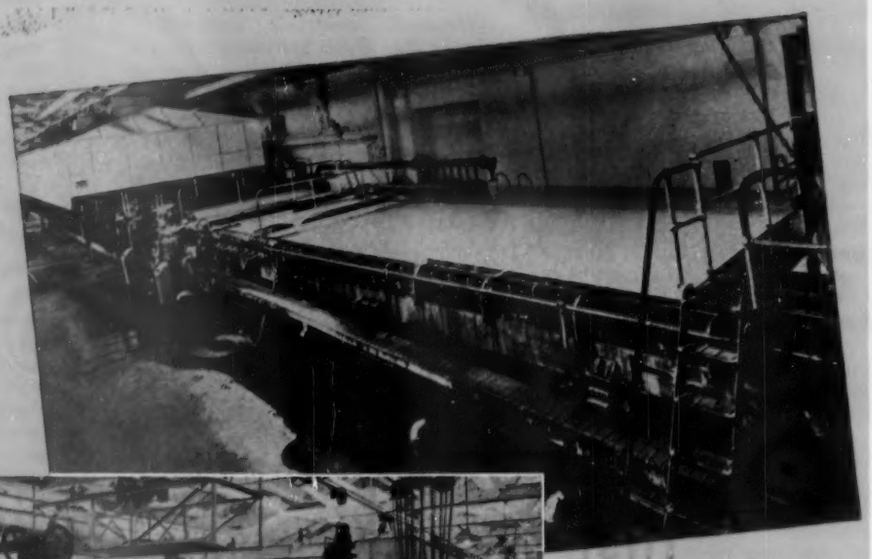
Increase drying capacity 10% to 30% . . . Dry the sheet uniformly clear across . . . Hold moisture content more even . . . Eliminate excessive shrinkage, cockling, curling, wet streaks . . . Reduce breaks and broke losses . . . Cut steam costs at least 10%.

Since any one of two of these benefits alone justify the installation of Fulton Systems, is it any wonder that all recently built machines have Fulton Systems?

Is it any wonder that operators of old machines or small machines now "see the light" and are installing Fulton Systems as fast as we can engineer them?

Cost—less than you think . . . Get the facts now and decide now.

MIDWEST-FULTON MACHINE CO.
918 WOODLEY AVENUE • DAYTON, OHIO



Machine from wet end

Machine from winder end

Newsprint Rolling at West Tacoma

When a group of publishers formed the West Tacoma Newsprint Company several years ago, Puseyjones were asked to rebuild their existing Fourdrinier Machine. Results were so satisfactory that the mill was soon ready for a new machine to meet increased newsprint demand.

Puseyjones developed exactly the machine that the owners wanted — not a giant as newsprint machines go, but a modern, medium-size newsprint machine designed to operate at speeds consistent with mill requirements.

Whatever your machine requirements may be — new machine or modernization, Fourdrinier, Cylinder, Yankee, or a combination of any of these — Puseyjones experience is freely offered to help you get the results you want. Our district representatives are factory-trained engineers, glad to be of service to you on any machine problem, large or small.

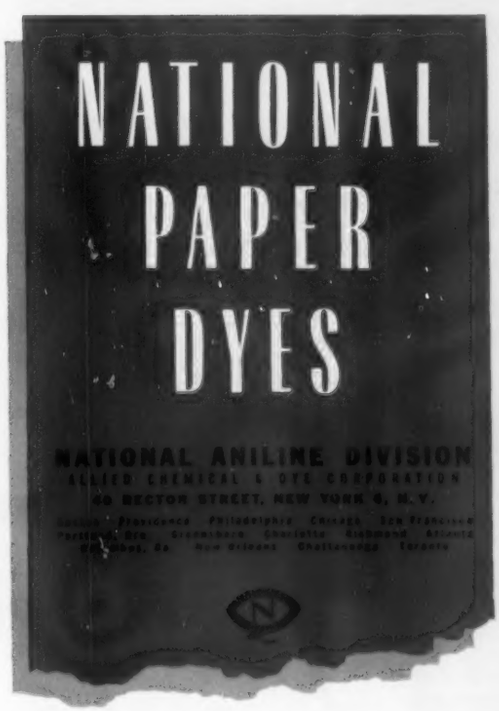
THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-Making Machinery
Fabricators and Welders of all classes of Steel and Alloy Products
Wilmington 99, Delaware, U.S.A.

Contemplating Colored Kraft?

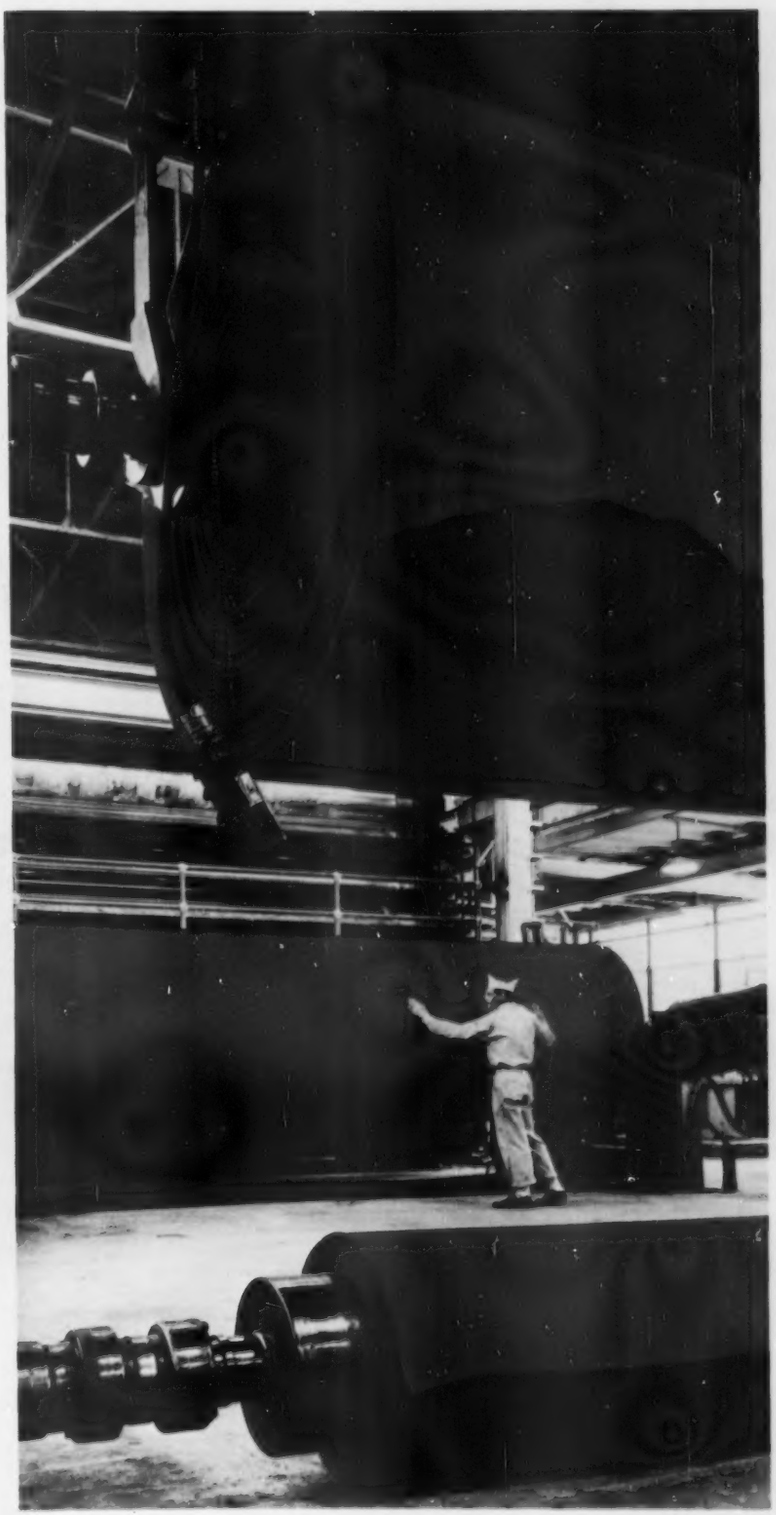
National Technical Service can save you costly time-consuming experiments in your mill by providing practical "know how" on coloring kraft, based on current laboratory work and our backlog of "on the job" experience.

National Technical Service laboratories are at your service to develop workable, economical formulas for your color line. Our paper technicians can duplicate "samples to match," and thus assist you in getting your share of the growing market for colored kraft papers and board.

To start "one jump ahead" on a colored kraft line, we invite you to use National Technical Service.



Allied Chemical



PULP & PAPER'S OWN PICTURE AT OPENING OF NEW HOOKER PLANT, MONTAGUE, MICH.

SEATED L to R: L. V. BLINN, The Northwest Paper Co.; LOREN J. DEMAND, Wisconsin Tissue Mills; F. S. YOUNG, Thilmany Pulp & Paper Co.; WILLIAM N. MONSSON, in charge of chlorine-caustic sales and service, Hooker Co.; H. L. VOSS, Mosinee Paper Mills, and R. W. HOOKER, Vice Pres., Hooker Co.
STANDING L to R: HAROLD H. HUSEBY, The Northwest Paper Co.; THEODORE W. DUNN, Dunn Paper Co.; ROBT. HELLA, The Northwest Paper Co.; HARRY T. KENDALL JR., The Northwest Paper Co.; S. I. ANDERSON, Hooker Co.; MILFORD NOSSAMAN, American Boxboard Co.; R. P. (TOM) PRICE, Hammermill Paper Co.; RICHARD W. KNECHTGES, American Boxboard Co.; A. K. McNAUGHTON, Marathon Corp., and R. L. HALL, American Boxboard Co.

INDUSTRY LEADERS GUESTS OF HOOKER CO. IN VANCOUVER, B. C.

(L to r) ROBERT LINDLEY MURRAY, President, Hooker Electrochemical Co., Niagara Falls, N.Y.; R. A. C. DOUGLAS, Vancouver, B.C., Director of new subsidiary, Hooker Chemicals Ltd.; ROGER W. HOOKER, Vice President, Hooker Co., Niagara Falls; COL. ALBERT H. HOOKER, retired Western Sales Mgr., now Tacoma, Wash., City Councilman and Director of Hooker Chemicals Ltd.; HENRY FOSS, of Foss Launch & Tug Co., Seattle; LAWSON TURCOTTE, President, Puget Sound Pulp & Timber Co. and Ketchikan Pulp Co.; WILLIAM McMAHAN, Vice Pres., Canadian Forest Products Ltd., Vancouver; PAUL E. ROBERTS, Gen. Mgr., Alaska Pine & Cellulose, Ltd., Vancouver, B.C.

New Hooker Plant Forseen at Vancouver As Pulp Men Inspect Latest in Michigan

PULP AND PAPER industry executives in the Middle West and Pacific Northwest were guests at two recent events launching expansion for Hooker Electrochemical Co. in those two areas.

The new $12,000,000 caustic soda-chlorine-nitrogen plant at Montague, Mich. was opened to inspection by management and operations executives of Michigan, Wisconsin and Minnesota mills.

The board of directors of Hooker held a meeting in Tacoma, Wash., and hosted key figures of the U. S. and Canadian industry at a reception in Vancouver, B. C.

The Vancouver meeting foreshadowed further expansion of the newly-organized Canadian subsidiary, Hooker Electrochemical Co., which has 60 tidewater acres at North Vancouver, B.C., where another new chlorine-caustic soda plant is planned.

Edward R. Bartlett, board chairman, and Robert Lindley Murray, president, led Hooker representatives in the Far West. The Vancouver plant plans are not finalized and may await expected expansion of bleach pulp production in British Columbia. It already is distributing caustic soda from Vancouver.

The Michigan plant is the first major expansion by Hooker since the Tacoma plant was built in 1929. Salt deposits of West Michigan, lower freight charges to Midwest mills, low cost power and fuel and ample water decided the Montague site. It takes 1.75 tons of salt plus water to make 1.0 tons of chlorine and 1.1 tons of caustic soda. Salt extends as far south as Muskegon, Mich.

ELECT NEW HOOKER VP'S

H. B. YOUNG (left) of Niagara Falls, N. Y., and THOMAS E. MOFFITT (right), of Tacoma, Wash., were elected new Vice Presidents in charge of Operations, East and West, respectively, when Directors of Hooker Electrochemical Co. met on Pacific Coast. Mr. Moffitt has charge of all operations in Far West Canada as well as U.S. and in Alaska. He is a Cornell graduate ('22) and joined Hooker in 1930 as Asst. Western Sales Mgr. He recently has been Works Mgr. at Tacoma. Mr. Young also graduated from Cornell ('21), also Phila. Textile School ('23) and joined Hooker in 1935. He has been Works Mgr. of three eastern plants.

Another

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Installation

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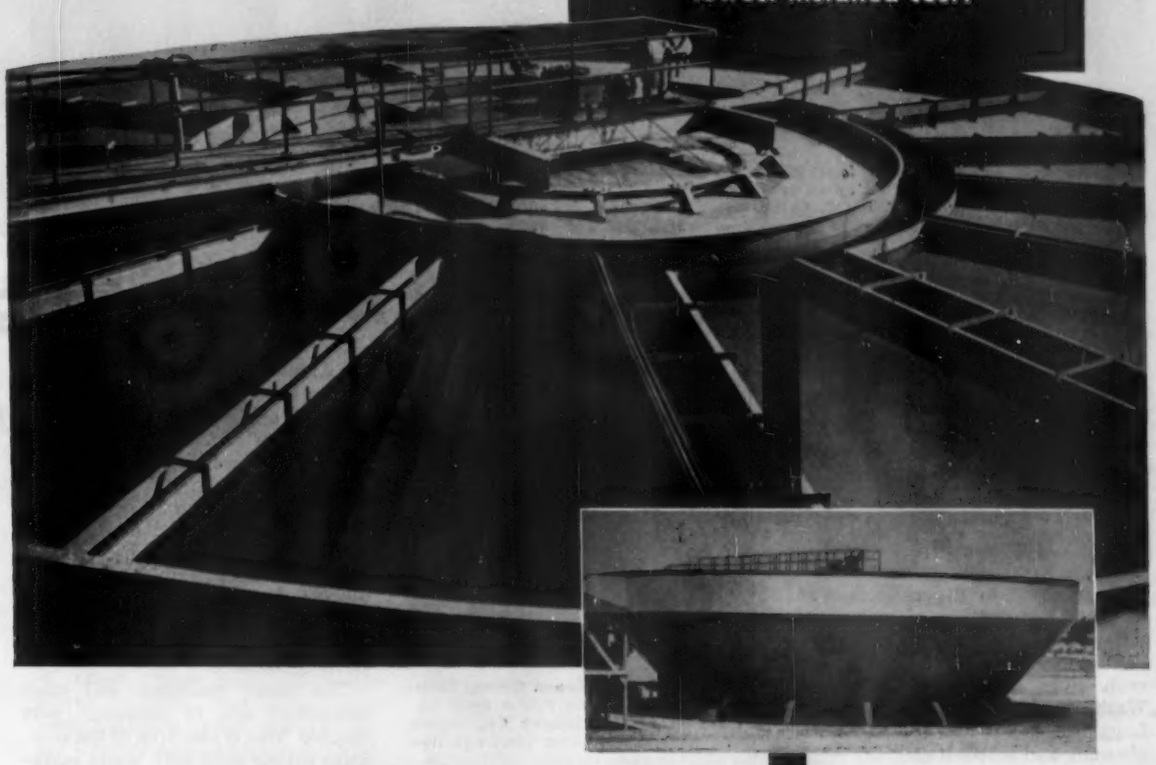
that highest quality can be obtained at lowest installed cost!



PROCESS WATER of highest quality (low color, iron and alkalinity) was the requirement of this paper mill . . . regardless of changes in raw water. In addition, space and installed cost were important considerations.

On all of these counts — uniform effluent quality, installed cost, and space savings — the Accelator secured the job, just as it has on many other installations. (Accelators are treating more than *one billion* gallons per day!)

Space and installation economies are illustrated in the photographs above. Note how the Accelator tank is shaped for simple support on concrete pad and buttresses. This meant savings in installation costs. Space savings are evident when you consider that this *single tank* combines mixing, coagulation and clarification and can treat 10 million gallons per day!

For more information on how the Accelator can work for you, secure your copy of the 28-page Accelator Bulletin.

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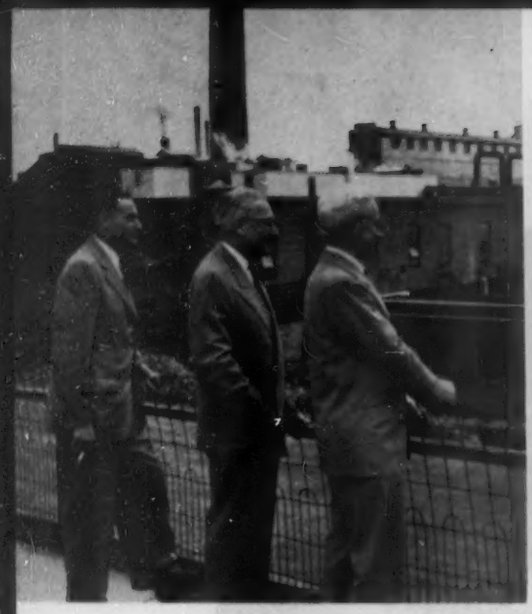
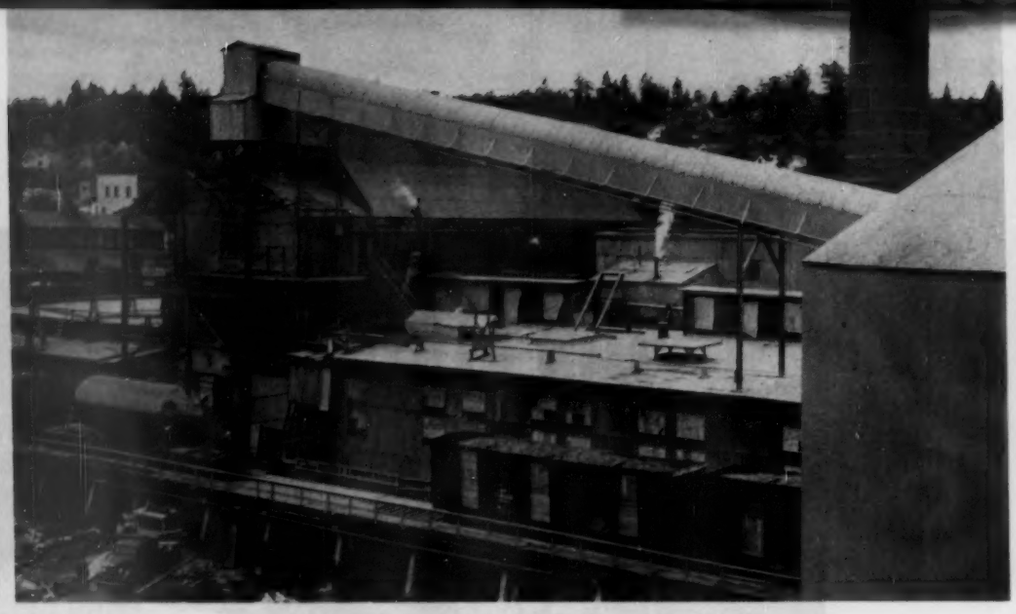


PLEASED WITH JOB WELL DONE

LOOKING OVER one of the oldest forest industry operations in the West are (l to r) DONALD F. McCALL, Asst. Gen. Mgr.; A. B. MOODY, Vice Pres. and Gen. Mgr.; and JAMES C. HAYES, Mgr. of Woodlands and Wood Buyer, and a co-designer of new wood preparation dept.



CARBON STEEL DIGESTER BEFORE GOING UP

ANOTHER A. O. SMITH digester has arrived in Everett Pulp & Paper mill yard, ready for erection. Three new A. O. Smith digesters were ordered in all, being used in semi-kraft process. New galvanized iron housed chip conveyor is shown and hogged fuel cars in foreground.

How Everett Semi-Kraft Mill Kept Right on

By C. W. CASSELL

(Written exclusively for PULP & PAPER—based on report made at Engineering Conference of Pacific Section of Tappi)

HOW TO ACHIEVE a 50% increase in chemical woodpulp production and a 30% increase in paper production without interruption of a 7-days-per-week operation?

This was accomplished at the Everett Pulp & Paper Co., Everett, Wash., now a division of Simpson Logging Co., but it required careful planning and scheduling.

In a mill which might boast of having "one of almost everything that is used in the industry," this was quite a problem. Because nearly every department and service in the entire mill was affected.

It took 2½ years to do the job. But in the end, quality was improved. Operations, now, are less likely to be affected by maintenance outages. Pulp storage capacity is increased.

Machines can run longer on certain grades. Efficiency is increased. And, the production goals were comfortably attained.

The author was chief engineer at Everett Pulp & Paper Co. during the construction period described. He is now assistant to the president, Deerfield Glassine Co., Monroe Bridge, Mass.

PAUL FORTIER (left), veteran General Superintendent of the Everett Pulp & Paper Co., division of Simpson Logging Co., Everett, Wash. He went to Everett years ago from the Michigan paper industry.

PAUL F. PETERSON (right), Staff Assistant and Director of Purchases and Industrial Relations, Everett Pulp and Paper.

Brief Background of This Story

The Everett mill produces over 100 tons of book paper daily, obtaining much of its fiber requirements in the form of wood by-products from nearby Pacific Northwest lumber mills. The company itself, which is fully integrated, is one of the oldest forest products industries in the area. It was founded in 1891.

Late in 1951, it became a division of Simpson Logging Co. This merged two pioneer wood products organizations of the Pacific Northwest. The Simpson company was established in Shelton, Wash., in 1895 and today produces lumber, doors, plywood and insulating board products in its Mason and Grays Harbor county holdings as well as redwood products in its Arcata, Calif., plant.

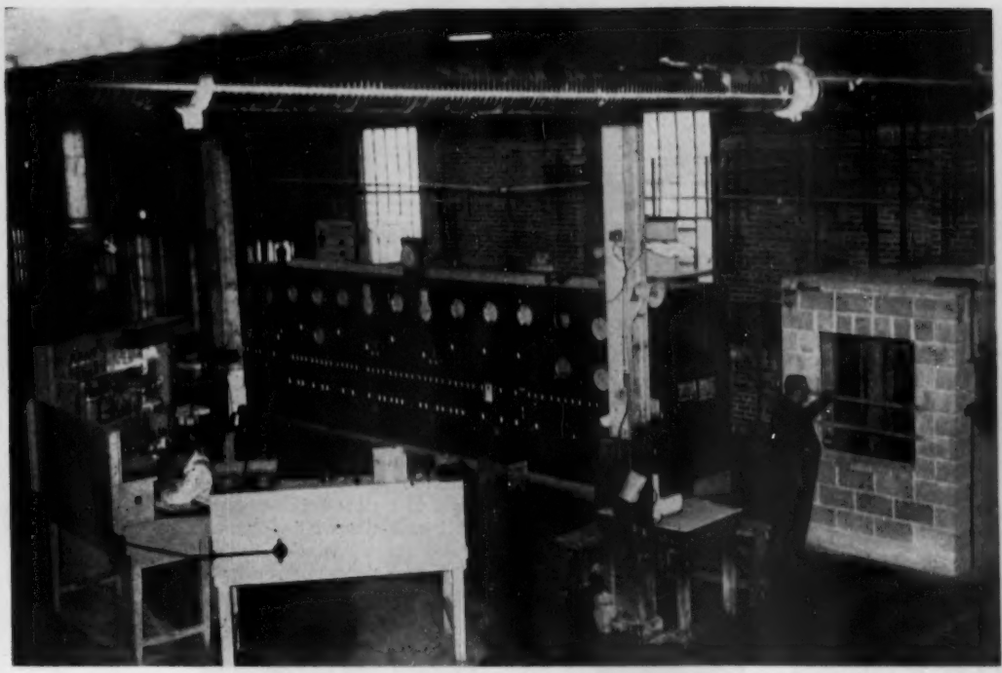
The Everett division, manufacturing pulp and paper exclusively, converts much of its own products for school, business and stationery uses. Its label, printing, and offset grades are also well known by Pacific Coast printers. The demand for the wide variety of its products has resulted in considerable flexibility in its operations, much of which is devoted to machine making orders to supply the critical individual requirements of its customers.

The paper machines and other equipment are, of necessity, very flexible. This is also true of the complete sulfate pulp mill, waste magazine de-inking plant, finishing room and stationery converting plant. They might boast that they have "one of almost everything that is used in the industry."

Some of this equipment, such as the chemical recovery plant, is quite new. Accordingly, when the company decided to modernize and expand in late 1950, the 3-year-old Tomlinson furnace was selected as the pivot. The capacity of all other equipment was then increased to equal the peak Tomlinson capacity of 94 tons of pulp per day.

This required a 50% increase in the chemical pulp, and about 30% in paper machine output. Nearly every department and service in the mill was affected, yet all work had to be done without interrupting the 7-days-per-week operation.

This called for careful scheduling of construction, and some intermediate steps to permit portions of



OPERATING BLEACH PLANT AT CONTROL CENTER

FOXBORO and BRISTOL controls, arranged by Pulp Bleaching Co., are shown in extended plant at Everett, changed from batch to continuous process. Concrete block chamber at right houses chlorine vaporizer, temperature and pressure controls. Pulp testing center at left front.

ADJUSTS FLOW OF LIQUOR TO NEW EVAPS

FRED STACEY, Power Supt., adjusts liquor flow to Zaremba evaporators fabricated by Puget Sound Sheet Metal Works of Seattle. At lower right is Foxboro ratio control meter; at lower left Brown Honeywell weak liquor flowmaster.

Producing while Expanding and Modernizing

processes to be altered while full production continued. In 2½ years the work was brought to satisfactory conclusion.

Sandwell and Co., Vancouver, B. C., and Seattle, were general consultants; Howard S. Wright & Co., Seattle, was general contractor. Mel W. Olson, (now maintenance and power engineer), was project engineer. Sub-contractors included Sager Construction on piping and Rodgers Electric, both of Everett. Outstanding cooperation was achieved between contractors and mill personnel.

Preliminary studies revealed that increased needs would include: Steam, compressed air, electric power, water and industrial sewers; wood and chip preparation equipment; digesters, evaporators, pulp screens, bleaching and washing capacity, pulp refiners and high density pulp storage; waste magazine de-inking plant; paper machine output; and finishing capacity.

In designing these facilities, the company took advantage of opportunities to improve quality and uniformity of pulp and paper. This necessitated installation of modern controls, regulators and other expedients for reducing process variables.

The mill operated 11 small 1000 cu. ft. digesters, one brownstock washer, a batch-type three stage bleach plant, and had very little stock chest capacity. The furnish averaged about 70% Douglas fir and 30% cottonwood. As about 40 digester blows were made every day, with fir and cottonwood alternating every few hours, there was room for improvement. Also, measures were taken to avoid excessive corrosion, foundation settling and process interruptions due to seasonal floods, and to incorporate major repairs with new work.

C. W. CASSELL (left), Chief Engineer at Everett Pulp & Paper, during all phases of construction. Now Assistant to President, Deerfield Glassine Co.

MEL W. OLSON (right), was Assistant Chief and Project Engineer during construction. Remains at Everett Pulp & Paper as Maintenance and Power Engineer.

About the Author

C. W. Cassell was chief engineer at Everett Pulp & Paper during all the phases of construction he describes—which lasted from Oct. 1950 through June 1953. He is an m. e., Purdue, and he attended Institute of Paper Chemistry two years. His father was manager of Indianapolis Bleaching Co. division of Bemis Bros. Bag Co. Cassell has 20 years' in pulp and paper and related fields and is now assistant to the president of the Deerfield Glassine Co., Monroe Bridge, Mass.

Power Plant— Fuel Sources Change

In the power plant, a new Babcock & Wilcox 80,000 lbs./hr. Stirling boiler was installed by C. C. Moore & Co. This is an oil-fired unit capable of developing 600 lbs. pressure at 750° total temperature. It is being operated for the time being at 175 lbs. with 30° of superheat. This is the rating of the Tomlinson and five old Babcock & Wilcox inclined-tube hogged-fuel boilers. The latter have Dutch ovens and inclined grates, and are amazingly efficient. However, the local fuel situation has been changing drastically.

Weyerhaeuser Timber Co. now has a new kraft mill in Everett, operating on chips from the adjacent Weyerhaeuser lumber mill which had been a principal supplier of hogged fuel to Everett Pulp & Paper Co. Prior to installation of lumber mill's hydraulic barker this waste was usable only as hogged fuel. Accordingly, the new boiler is fired with four Babcock & Wilcox steam-atomizing oil burners, and will be used during hogged-fuel deficiencies. As a precaution against future fuel trends, the boiler setting is high enough to accommodate a spreader stoker for coal, if ever wanted.

The four oil burners are protected with "Fireye" photoelectric oil shutoffs to prevent possible furnace explosions in the event of a "blackout." This is Combustion Control Corp. apparatus. The remainder of the boiler and furnace equipment is conventional, including a separate stub-stack, tabular air heater, Clarage

THESE ARE KEY MEN AT EVERETT

OPERATING THE MODERNIZED plant of Everett Pulp & Paper are, left to right standing, HAAK BERGER, Asst. Pulp Mill Supt.; WARDELL DUGGAN, Supervisor of Sales Promotion; JAMES RAMSEY, Asst. Paper Mill Supt.; MEL OLSON, Maintenance and Power Engineer, who was the liaison man between the management and the consulting engineers and general contractors during the construction program; and H. R. RUSSELL, Paper Mill Supt. Kneeling, at left is P. R. SMITH, Pulp Mill Supt.; at right, F. R. HAMILTON, Asst. Gen. Supt.

motor-driven forced and induced-draft fans, Bailey instruments and controls, and eye-high water column. The boiler is housed in a new steel and Transite building.

This building stands on a fill in a former ravine, and several of the wood piles were driven to a depth of 84 ft.

United Engineering Co. provided the Hall Laboratories boiler water treatment system, including a Hagan ring gauge, timing feeders and a Milton Roy proportioning pump. The feedwater is about 40% make-up which has been warmed by passing through the Zaremba evaporator condensers.

Prior to this year, fuel oil was used only in the lime kiln, for starting and stopping the recovery furnace, and as a booster in the hogged-fuel boilers when needed. Using so little oil, facilities had never been provided for handling Bunker C fuel oil. Instead, Standard of California's PC400 oil was burned in summertime, and their lighter PC300 in winter. Normally, Everett does not get very cold.

With greater dependance on oil, the engineers arranged to take advantage of low-cost Bunker C by installing cartridge heaters in storage tanks, and overhead steam-traced pipelines. These deliver to a buried "day" tank improvised from a discarded digester. Oil is metered to each point of use.

A new 800 cfm Ingersoll-Rand XL air compressor was installed. This is powered by an integral 125 hp induction motor. Replacing several old compressors, this unit has improved the quality of mill air by eliminating entrained water and oil. One old compressor supplements the Tomlinson lancing compressor, where it seems impossible to have too much air.

How Electrical System Was Improved

The electrical system has undergone substantial change.

The mill had reached the capacity of its 5000 kva transformer substation. This reduces Public Utility District power from 55,000 volts down to 480-3 phase- 60 cycles. Nine feeder circuits distributed this around the mill. These feeders were of two or even three 500,000 circular-mil rubber-covered cables per phase. It was felt that age and overloads had probably deteriorated it. A long-range replacement program was initiated at the time the additional power was provided.

A 4160 volt distribution system was selected, and a 2,000 kva bank of transformers installed. Loads throughout the mill were regrouped to provide proper branch protection and permit future additions. One 1,000 and two 750 kva unit substations were installed in operating departments, reducing to 480 volts for local use. Some old 480 volt feeders were replaced for the same voltage, as it appeared impractical to switch completely to the unit substation type of distribution at this time.

The new system was provided by General Electric Co. It includes a battery-operated overload-relay system. The 4160 volt feeders are Geoprene insulated, in conduit. The distribution system is wyc-connected, with grounded neutral to reduce the hazard of line faults.

The old 480 volt system is delta-connected. Serious "ground" troubles have been reduced by using an Allen ground detector.

Also at 4160 volts are one new synchronous jordan motor and a 600 kva synchronous alternator. The latter is a part of a new turbine-generator set installed on No. 3 paper machine, and can operate as motor or generator to balance power load with paper drying steam requirements.

Chemical Recovery— Capacity Increased

The chemical recovery system had been modernized in 1946, and was adequate for nearly 100 tons of pulp excepting for the black liquor evaporators.

Old horizontal evaporators were replaced by three new 6,000 sq. ft. rising-film Zaremba evaporators and a vertical condenser. These supplemented two five year old 3100 sq. ft. vertical evaporators to form a 5-body quintuple-effect evaporator. Condenser and first three effects are of Type 316 stainless steel, and fourth effect has stainless-clad tube sheets. A complete new battery of Taber stainless-steel pumps was installed. Liquor density is recorded at three points.

R. E. Chase & Co., Tacoma, Wash., supplied the evaporators, which which were fabricated by Puget Sound Sheet Metal Works, Seattle. Operation is virtually automatic.

Wood Preparation— In a New Plant

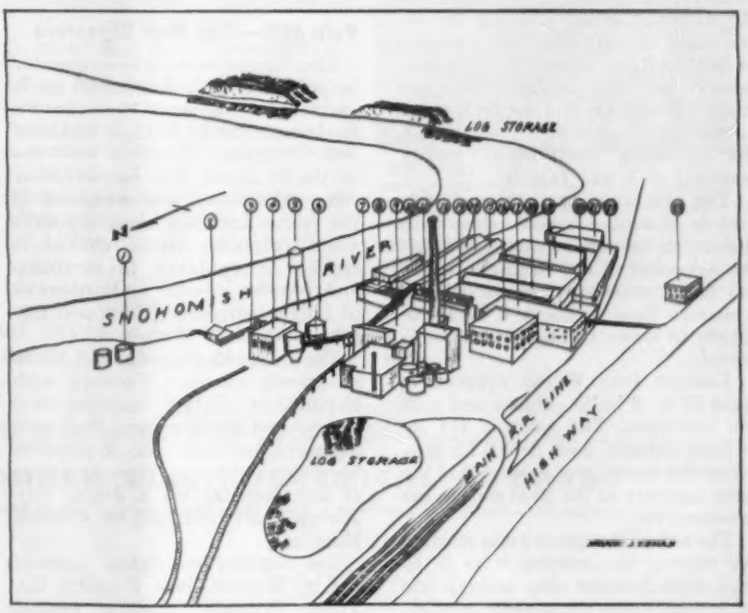
The wood preparation plant was replaced completely between splitter and digesters. The river-front equipment, including circular and drag saws, a horizontal steam splitter and a recently-acquired Nicholson dry barker, were retained. The barker has been particularly satisfactory on cottonwood logs, which are 12 to 50 in. in diameter and 4 to 5 ft. long as barked. This is a lathe-type barker with pneumatic scraper.

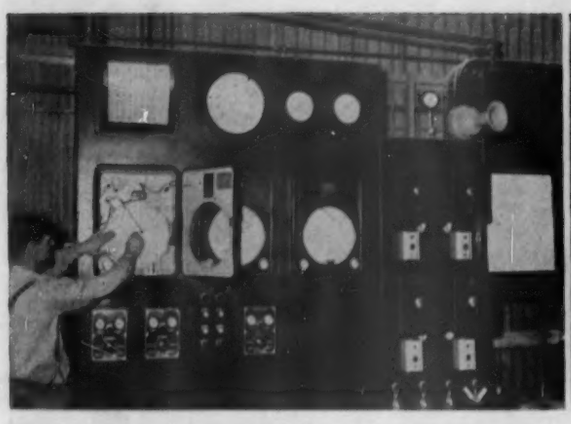
This mill receives two-thirds of its pulpwood requirements from nearby lumber and plywood mills in the form of their wastes: mill ends, chipped slabs and veneer trimmings, peeler cores and sub-standard logs. The remainder is new cottonwood, much of it logged from the company's own forests. Thus, wood is received in nearly every size from chips to 50 in. diameter by 40 ft.

HERE'S modernized Everett Pulp & Paper Co. mill from the air. Snohomish River in background provides drainage for fine timberlands, discharging into salt water.
(Photo by Western Ways, Inc.)

KEY TO THE AERIAL photo is this line tracing done through courtesy of Everett Pulp & Paper Co. by one of the staff engineers, John Gould. The related components and numbers are as follows:

1. Fuel oil tanks.
2. Log haul, cut-off saw
3. Barker and splitter
4. Chipping plant
5. Water tower
6. Chip storage silo
7. Lime recovery and causticizing
8. Water filter plant
9. Boiler and evaporator bdg.
10. Maintenance building
11. Liquor storage and clarifier tanks
12. Recovery furnace
13. Digesters
14. Warehouse
15. Printing shop
16. Waste paper plant
17. Bleach plant and washers
18. Paper machines Nos. 1 & 2
19. Finishing and converting
20. Mill office
21. Box factory
22. Paper machine No. 3
23. Office building





CHANGING A CHART TO RECORD B&W BOILER DATA

JACK PAURO, Utility Man in Power Plant, changes chart on Bailey meter on panel for new 80,000 lb/hr. Babcock & Wilcox oil-fired boiler. Meters record steam, air flow, temperature, steam and feedwater pressures.

MODERNIZED NO. 1 MACHINE

PUSEY & JONES built the three machines at Everett Pulp & Paper and did most of the modernization work on them. Here are new Pusey-Jones calender stacks and Pope reel for No. 1.

long logs, by water, rail and truck.

James C. Hayes, wood buyer and woodlands manager, pioneered in the salvage of veneer and plywood mill waste by developing a veneer chipper, with Sumner Iron Works of Everett. Over a score are in operation in plywood mills, effecting a substantial saving in natural resources.

Several such chippers are in cooperating mills. The unscreened chips are usually trucked to the pulp mill in 10-unit (2000 cu. ft.) trailers. These are dumped endwise by means of an Ederer Engineering crane, into a sub-grade steel hopper.

Link-Belt Co. designed and supplied conveyors and elevators in the wood room. An inclined chain in the chip receiving hopper delivers chips to a troughed belt leading to unscreened storage. This belt parallels a new railroad siding, so chips may also be unloaded manually from box cars. This siding, and another, share a chain conveyor in a steel trough for unloading "short wood," mainly sawmill ends and rejects.

The new wood preparation building is of timber construction, with bowstring trusses, arranged so it can be extended in the future to house all log preparation equipment. The concrete floor is about 6 ft. above grade to make the operation flood-proof.

Sumner Iron Works supplied a new 72 in. 8 knife chipper and a 36 in. rechipper. The existing 110 in. 4 knife chipper, with its 300 hp synchronous motor, was relocated in the new quarters as the final step in the changeover.

The actual changeover was effected by moving the existing 8 by 16 ft. two-deck Sumner chip screens one at a time, while completely rebuilding them. Then the plant was sustained on trucked fir chips and cottonwood pulpwood while the chain conveyor from the splitter was swung around to deliver logs to the new plant.

Several types of wood may be received and processed simultaneously. Unscreened chips are stored in two 40,000 cu. ft. steel silos built by Flohr & Co., Seattle. Link-Belt rotary-plate chip feeders are used. Conveyors are arranged so that when the digester cook signals to the chip screen operator, the latter can withdraw fir or cottonwood chips from the silos, screen them and convey them to the digester charging level with a single control.

Incidentally, some sawdust is sold to farmers for use as humus or fertilizer.

Pulp Mill—Two New Digesters

The digester plant was augmented by two new A. O. Smith 2000 cu. ft. carbon steel digesters. These are 9½ ft. diameter by 35 ft. high, insulated with Fiberglas. The shell thickness of 1⅛ in. allows 50% for corrosion. After all welding was completed in the fabricating shop, these digesters were completely stress-relieved to reduce susceptibility to corrosion and possible caustic embrittlement of fatigue corrosion (Corrosion experience to July 1954).

The new blowvalves are 8 in. electrically-operated Yarways, with chromium-plated stainless-steel sleeves and plungers, and both new digesters discharge into a common blowline which can blow to either of two blowpits via a 3-way air-operated valve designed by Western Machinery.

The digester circulating systems are by Electric Steel Foundry Co. These circulate from a central strainer to a spring-mounted 1500 gpm. stainless Bingham pump. This discharges to the top and bottom of the digester via a removable spool piece which can be replaced by a future external heater. Direct steam heating is used now, with a 2 in. stainless nozzle projecting up into the bottom through each liquor inlet. This has proved very satisfactory.

Tubing in Electric Steel Foundry heaters is stainless steel, 16 ga. and 1¼ in. diameter supplied by Carpenter Steel Co., Alloy Tube Division.

A Byron-Jackson motorpump supplies high-pressure water to the liquor pump seals. Each digester is provided with Foxboro instrumentation, which includes cooking cycle control from a cut cam, automatic relief of non-condensible gases, and scanning temperature recording at four points.

It is now the practice to cook fir and cottonwood alternately, each for as long a period as storage will permit. Ultimately, they may cook fir 16-18 hours per day, then switch to cottonwood. There are about 50 blows per day into two blowpits, which are provided with a heat-recovery system and hot-water accumulator. A variable-speed pump delivers the virgin pulp to the Oliver four-stage, two cylinder brown stock washer. The washer change-over from free fir to slow cottonwood requires expert operation, and some foam problems occur occasionally. Washed brown-stock goes to either the fir or the cottonwood unscreened-stock chest.

New Layout Adds Screening Capacity

The original screen room had a capacity of only 65 tons. This was increased to 100 tons by merely changing the arrangement.

Three rows of four 14-plate D. J.

Here's a new source for caustic soda

If your plant is in this area you can now have liquid caustic soda delivered more rapidly, more dependably, than ever before.

Here's what this new Hooker caustic soda plant at Montague, Mich., means to Midwest industry:

1. **Fast delivery.** You can have caustic soda delivered by tank car, loaded and dispatched within 24 hours of your call. In and near Chicago, tank car deliveries are made from Chicago stocks.
2. **Freight savings.** Depending on locality, you can save up to $2.84 per ton on freight. (To learn specific freight savings to your plant, just phone the Chicago office—CEntral 6-1311.)
3. **Dockside delivery.** On Lake Michigan and adjacent waterways you can have Hooker caustic delivered by barge—a new Hooker service (minimum 250 tons, dry basis). Savings are substantial.
4. **Prompt service you can count on.** At the Hooker sales office, 1 N. LaSalle St., Chicago, men are ready to help you plan efficient handling and storage, meet emergency needs, work out the most economical purchasing and delivery arrangements.
5. **Smoother, better processing.** You can use constant processing methods, and get consistent results with Hooker caustic soda. It's produced under careful control; more than 20 separate inspections and analyses protect its uniformity.

Tighten up your caustic supply line now

Many industrial leaders in the Midwest are already enjoying the convenience, economy, and dependable supply of Hooker caustic shipped from Montague.

You can have the same convenience and security *tomorrow*. Just pick up your phone and call us.

Caustic soda for Midwest industry comes from this new $12 million Hooker plant at Montague, Mich. The plant is built over a tremendous bed of pure salt, which supplies the caustic-producing cells.

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HOOKER ELECTROCHEMICAL COMPANY

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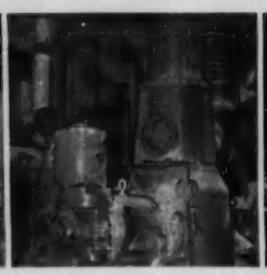
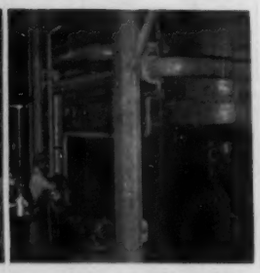
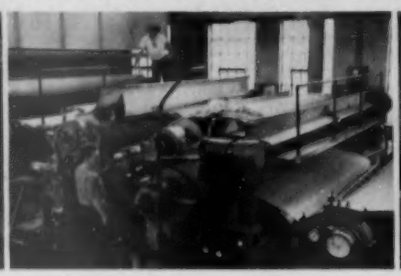
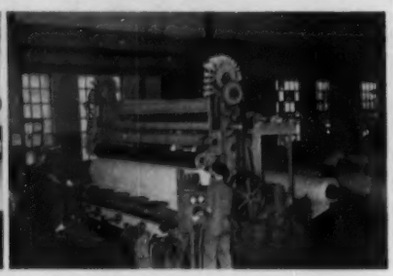
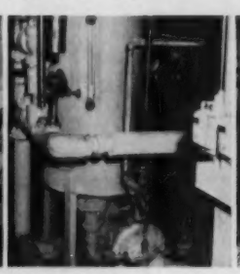
Views Taken in Tour of Everett Pulp & Paper Co. by a *PULP & PAPER* Editor

(Left) FRONT ENTRANCE of main office. (Second) SVEEN-PEDERSEN save-all in action, a new addition at Everett. (Third) SHARTLE BROS. Machine Div. of Black-Clawson provided Hydrafuge for removing foreign material magazines. Uses continuous screw type ejector from waste. (Right) PUGET SOUND Sheet Metal Works fabricated Zaremba evaporater, operated by Ralph Campbell.

(Left) PRESS FEET STRETCH and guide rolls are shown in basement under Everett's No. 3 machine, with Bird Vickery felt conditioner. (Middle) ADDITIONS made to No. 3 Machine press section, with suction couch at right, followed by new Beloit suction first press and original second and smoothing press. Pusey & Jones built machine. (Right) CAMERON MACHINE provided new rewinder, with new General Electric Ampidyne drive. This serves after No. 3 machine. Shear-cut slitters are used.



(Left) FRED STACEY, Steam Engineer, inspects Elliot steam turbine. Pressure at inlet is 175 lbs., exhaust pressure is 30 lbs. Develops 630 hp at 3600 rpm. Elliott gear reduces shaft speed to 1200 rpm for driving GE synchroneous motor at left. (Second) ART McKELLIPS, Turbine Operator, looks through inspection port of GE AC motor generator unit driven by Elliott steam turbine. This is tied with utility power and either generates or "motors" to suit load. (Third) MIDWEST-FULTON dryer drainage system is an auxiliary for No. 3 Pusey & Jones machine. (Right) CHIPS seen going to rebuilt Sumner Iron Works heavy duty chip screens. Link-Belt provided conveyor and star feeders.

Murray screens were rearranged into four rows of three screens. The last row in each case provided the secondary and tertiary screening. The other rows were in parallel. The 50% increase in capacity is attributed to shortening the screen lines, constructing a smooth approach flume at the head of each line, controlling differential head more precisely by means of new stainless steel dams at each screen outlet port, and effecting better dilution both before screening and down the screen. Both showers and dilution boxes are in use. The screen outlet control dams were fabricated by Eckstrom Sheet Metal Works of Everett.

Screens are followed by two deckers and a new DeZurik consistency regulator which discharges into either screened fir or cottonwood chest.

Bleach Plant— Biggest Single Task

Bleach plant modernization was the biggest single task undertaken. A Pulp Bleaching Co. 3-stage batch plant installed in 1941 was redesigned by the same firm and Sandwell & Co. to function as a 4-stage continuous bleach plant.

The conversion was done without interrupting paper machine operation—with maximum bleach plant shutdowns of less than 24 hours. This necessitated doing the job in four steps, each of which left the mill with an operable bleach plant while isolating certain facilities to be rebuilt.

The completed plant has screened brown stock pumped through a Fischer-Porter Flowrator to an upflow chlorinator at about 3½% regulated consistency. Chlorine is vaporized to constant pressure and temperature, metered by a Flowrator, and introduced to the pulp in rubber-lined piping just ahead of the chlorinator. Pulp and chlorine flow are controlled and proportioned by automatic valves, the pulp valve being a hydraulic cylinder-actuated Saunders.

The chlorinator is 16 ft. in diameter by 39 ft. high, with steel shell by Hydraulic Supply Co., lined with ¼ in. of rubber by Chemical Proof Construction Co. It contains a low-speed ruber-covered paddle agitator on a vertical shaft driven by a new Western Gear vertical reducer.

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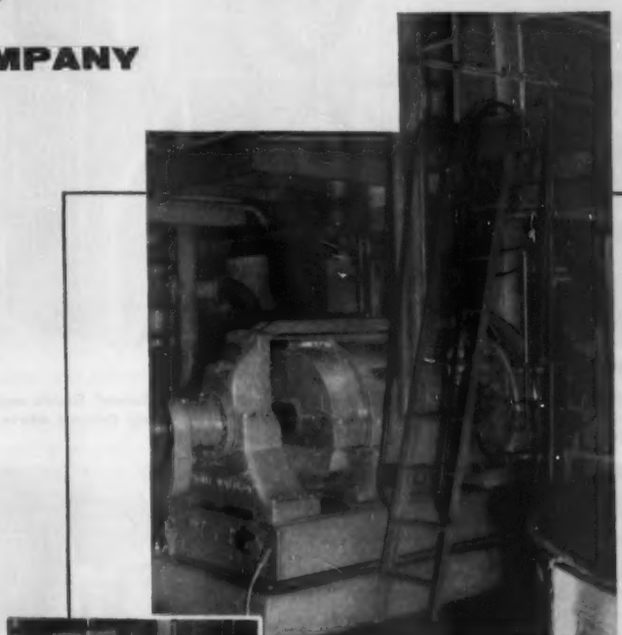

The Sprout-Waldron 450 HP Refiner at Dryden Paper Company, Ltd., Dryden, Ontario refining kraft knots and rejects. A considerable reduction in horsepower requirements is reported over previous pulping, with much superior refined pulp quality. S-W offers refiners and efficient, complete feeding, conveying and dewatering equipment in one "package" . . . with one contract . . . one responsibility.

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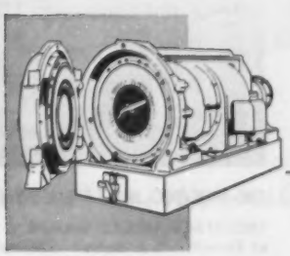

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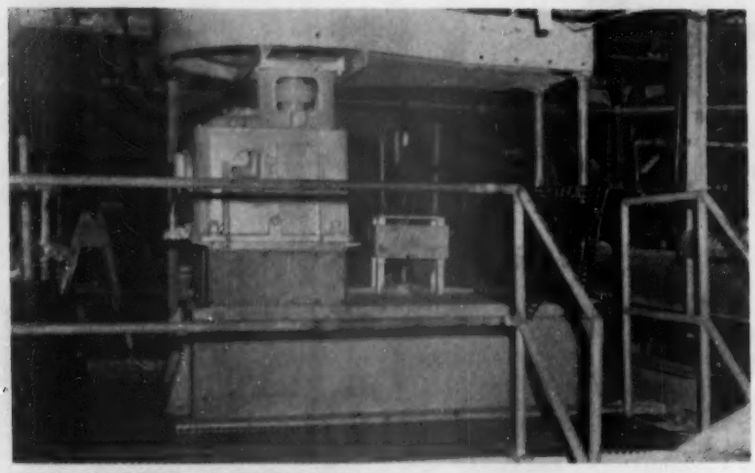
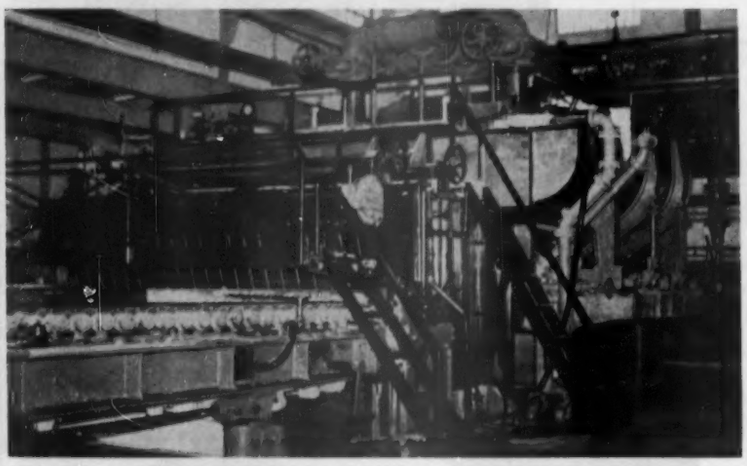


NOW BLEACHES CONTINUOUSLY

HIGH-DENSITY BLEACH REACTOR agitator drive at Everett. Vertical General Electric motor is out of picture of top right, driving vee-belt across top to Western Gear reducers above low-speed vertical shaft to agitators in tile-lined tank below.



FOR BETTER FLOW AND CLEANER STOCK

NEW VALLEY IRON WORKS INLET on No. 3 Paper Machine at Everett showing stationary deckles, headbox, Bird Machine Co. 3A screens and 10 in. Vortraps.

Incidentally, most of the existing agitator drives could be re-used by slowing them down with initial vee-belt drives or final spur-gear reductions, although some lubrication troubles had to be overcome at lower speeds. The engineering of these reducer alterations was by Pulp Bleaching and Western Gear Cos.

The chlorinator discharges directly into the dilution vat of the old rubber-covered, tile-vat acid washer. Two press rolls were provided on the mold to deliver 12% pulp to the first hypo mixer. Bleach liquor from a Flowrator is introduced enroute. The mixer is a double-shaft, two-motor multiple-pin type protected with Stalpic 42A acid and alkali-resistant coating inside, and with Neoprene maintenance paint externally. These coatings have done rather well except where Stalpic was subjected to chlorine or mechanical damage.

The first hypo mixer heats the high-density pulp with direct steam, under Foxboro automatic temperature control, and drops it into a downflow tile-lined high-density reactor 13 ft. in diameter and 23 ft. high. This contains a slowly revolving leveling plow at the top and a discharge plow at the bottom. The discharge plow admits dilution water to the pulp so it will flow to the outlet pump.

This pump feeds an Oliver vacuum washer with two press rolls and shredder, completing the second stage of bleaching.

The third stage is a high density caustic treatment in mixer, reactor and washer duplicating those used in the second stage.

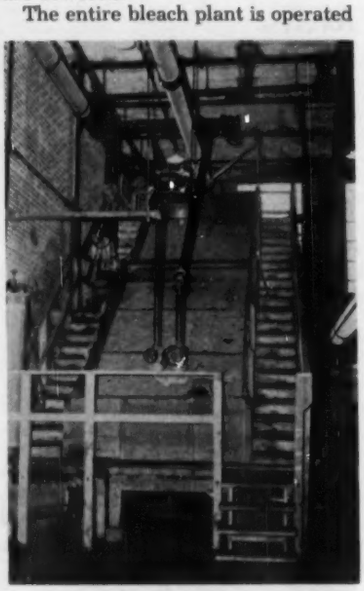
The fourth stage is a low-density hypochlorite bleach, effected in two 15 ft. diameter by 34 ft. high Vinylite-lined steel reactors, both up-flow and arranged in series with a transfer pump between them. Incidentally, considerable vinyl lining has been done in this plant, and it has been quite satisfactory where preparation and painting were done properly.

The last reactor discharges to a 3-stage decker-type Wolf-Hill washer. The third cylinder is mounted over two large outdoor high-density storage tanks 20 ft. in diameter and 48 ft. high. These are lined with 9 coats of Vinylite. A reversible screw conveyor dumps the 10% pulp into either the fir or the cottonwood tank.

Diluting nozzles arranged around the tank bottoms, with a hydraulic valve control, slush the pulp into Bingham centrifugal pumps as needed. The thin recovered pulp goes to an intermediate chest, then to a fourth washer and another DeZurik consistency regulator. Consistency is adjusted to 4% and the pulp stored in propeller-agitated chests until needed by the beater room. The propellers are driven by motors which were available through low-ratio vee-belt drives.

White water from the paper machines is used in the bleach plant, along with considerable fresh water. All water from the washers, excepting the first wash, is pumped counter-current to be re-used in some less-critical stage. The first washes are sewered.

The entire bleach plant is operated



DE-INKING MILLS LIKE THESE

TWO-STAGE HILLSIDE WASHER is introduced at Everett Pulp & Paper for de-inking cooked waste magazine stock. This type of washer is fairly new in Michigan de-ink plants, too.

PUT YOUR WHITEWATER . . . IN THE CLEAR!

● **Make your SAVEALL really save—**

For greater operating efficiency, use Swift's NEW PROCESS Glue in your flotation saveall system. This combination recovers valuable solids economically around the clock. Easy to use, uniform, reliable.

Used in your saveall, the unique colloidal action of Swift's NEW PROCESS Glue can be quickly noticed. Clearer effluents, higher recovery mean savings in stock, water, time, labor and money that help your saveall pay dividends.

● **IMPROVED BRIGHTNESS AND OPACITY—DENSER, MORE UNIFORM SHEETS—DEEPER COLORS**

Swift's NEW PROCESS Glue, used to help retain valuable titanium dioxide and clays on the sheets . . . fiber and filler on the wire, is as effective as it is economical. Its unusual crystalline structure quickly absorbs water. Its high colloidal action goes to work *instantly*, even when used at low concentrations, to improve brightness and opacity . . . to aid in the production of denser, smoother and more uniform sheets and deeper colors.

Find out more about Swift's NEW PROCESS Glue. An informative bulletin outlining formulae, equipment and instructions for these and other uses is available to you without obligation. Write for details and remember...

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INSIDE AND OUTSIDE CHIP CONVEYOR AT EVERETT

(Left) LOOKING INSIDE galvanized housing of new Link-Belt chip conveyor at Everett. Isaacson Iron Works, Seattle, fabricated steel.

(Right) Unscreened chips are conveyed to storage silos via this Link-Belt conveyor system and elevator.

from a single control panel, complete with signal lights and recorders. Facing this panel, and forming a compact "circle," is the pulp-testing and logging center.

De-Inking—How It Was Rebuilt

The waste magazine de-inking plant was extensively rebuilt. The old riffler, decker-type washers and flat screens following the cooking stage, were replaced by hillside washers, a Shartle Hydrafuge and a Bird Jonsson screen. The hot water used in this plant comes from the digester heat recovery system, and is the same water used in condensing the flash steam.

A new E. D. Jones & Sons Monarch jordan with stainless steel cutting tackle and recording wattmeter was installed to supplement an older Monarch in pre-refining the Douglas fir pulp.

Paper Machines—Longer Runs Possible

The paper machine's capacity was increased by altering the two smaller, older machines to produce some of the slower grades which were holding down the speed of the big No. 3 machine, and by extensively improving the latter to effect a 50% speed increase.

Both No. 1 and No. 2 machines were completely overhauled, and each was provided with a pair of modern, heavy calender stacks. These are Pusey & Jones calender stacks, with 22, 16 and 12 in. rolls, 9-high, with pneumatic loading, electric roll lift and Bowser-pressure-lubrication of SKF roller bearings.

Pusey & Jones Corp. and the General Electric Co. collaborated throughout in paper machine modernization.

No. 1 machine was supplied with a new General Electric Amplidyne-controlled couch drive, which has operated very satisfactorily with the remainder of the old G.E. sectional drive. A breaker calender was installed in the dryer section. The old 6-drum reel cutter and layboy were replaced with a Pusey & Jones Pope reel with Western Gear reducer, and an unwind stand with a water-cooled brake. Both No. 1 and 2 machines already had Cameron winders. No. 1 also received a new Midwest-Fulton dryer drainage system, from James Brinkley Co.

No. 3 machine was very extensively redesigned. The top speed was stepped up from 500 to 750 fpm.

New equipment included an Elliott 630 hp 3600 rpm turbine driving a G-E direct-current generator, exciter and the 600 kva synchronous machine previously mentioned. A much larger G. E. couch motor and Falk reducer were provided, and other motors and reduction gears reshuffled with changes in the power load.

The gear ratios of the existing Falk reducers were changed in order to preserve reasonable motor speeds.

Eight additional 60 in. dryers were put into the space previously occupied by the third press. The third press was removed, the second press moved closer to the first, and the remaining press felts carried down into the basement to save space. Bird Vickery jordan-type felt conditioners were provided. Four new 48 in. felt dryers with anti-friction bearings were installed, with another Ross vapor-absorption felt-drying unit. A second Ross Grewin system was installed for the new paper dryers. The entire dryer section was equipped with Barco rotary steam joints and a Fulton Dryer drainage system.

The plain first press was replaced with a Beloit suction press. A Nash H-9 vacuum pump was installed to serve this press and two Nash H-9 pumps were installed to produce a couch vacuum of 20 in. The second press was changed from a reverse to a straight-through press.

A Valley Iron Works stock inlet was installed on the Fourdrinier to replace the old double-slice and headbox. Two more suction boxes were added to the wire, with additions to the Broughton system. The 14 in. hollow-shaft dandy roll was replaced with a 16 in. J. J. Plank & Co. trunnion type. Five 10 in. Vortraps were installed, with some of the original 4 in. Vortraps being retained as secondaries, which also serve to replace the Bird tailings screen. The new Vortrap pump is a Bingham 6500 gpm, acid-resisting bronze centrifugal.

A stainless steel stock regulating box was installed, containing a De-Zurik consistency regulator and a propeller-agitator. The mixing box is arranged so that the water ultimately routed to the save-all is the weakest in fiber content. A new 1200 gpm Sveen-Pederson Save-all is in operation, operating in a Stebbins tile vat.

At the dry end, a Camachine 19 winder replaced the old 4-drum winder. This is unique in having shear-cut slitters. It is equipped with pneumatic tension control of the unwinder brake, and with a Cameron roll-lowering table.

Summing up these changes, the plant reports a substantial increase in production. It has been necessary to speed up the finishing operations as by the installation of a new Maxson "Erie" overlapping layboy. Quality has been improved, and operations are less likely to be affected by maintenance outages, because of the large pulp storage capacity.

Ted Cooper Fatally Hurt in Accident

Accidental death of E. W. G. (Ted) Cooper, former assistant superintendent of Crown-Zellerbach Corp., Camas, Wash., was reported recently from Australia. Mr. Cooper left Camas in 1940 to become superintendent of the then-new Australian Newsprint Co. mill at Boyer, Tasmania. He was on his way to Burnie, Tasmania, to take a position with larger mill when the unexplained accident occurred.

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CORROSION PROBLEM:
CHLORINE DIOXIDE BLEACH

SOLVED with ATLAS VITROPLAST®

Spent-liquor tank of chlorine dioxide plant at a North Carolina paper mill. Construction utilizes VITROPLAST cement with acid-brick lining.

All the advantages that the new chlorine dioxide bleach process offered the paper industry were at stake . . . unless the corrosion problem of this strong reagent could be solved. The only answer available was ATLAS VITROPLAST —a remarkable vinyl-base corrosion-proof cement which, in addition to resisting chlorine dioxide, also resists sodium hypochlorite, chlorine and other bleaching agents at pH values ranging from 1 to 11. This versatile range of resistance has made VITROPLAST Cement essential in the chlorine dioxide process where no other cement provides the necessary properties . . . no other construction combines the economy and service.

VITROPLAST is also being used for other applications such as pulp stock and white water chests because of its highly desirable physical and chemical properties . . . and to reduce product contamination. VITROPLAST will set in contact with concrete or steel. It has a setting time of two hours at normal room temperature, and it has a working time of approximately 40 minutes.

As specialists for over thirty years in solving industry's corrosion problems, the services of the Atlas Mineral Products Company go beyond furnishing materials of corrosion-proof construction. Atlas also provides engineering assistance in the specialized design of vessels, floors, exhaust systems and similar equipment for corrosive applications.

COMPLETE DATA on VITROPLAST is available in ATLAS Technical Bulletin 5-30A. Send for your copy.

ATLAS . . . corrosion-proof cements . . . coatings . . . vessel linings . . . plastic structures.

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Engineering representatives throughout the United States

HEADS COAST MANUF'ERS

ROBERT S. WERTHEIMER (left), Vice Pres. and Gen. Mgr., Longview Fibre Co., is new President of Pacific Coast Assn. of Pulp & Paper Mfrs., which since 1934 has annually negotiated contracts for virtually all Coast mills with two AFL Unions. Also conducts annual Joint Safety Conferences.
SID W. GRIMES (right), continues as Secretary, with permanent headquarters at 1233 American Bank Bldg., Portland, Ore. He was a Rayonier Personnel and Safety Supervisor before he took Assn. post several years ago.

Wertheimer Heads Coast Management

Robert S. Wertheimer, vice president and general mgr., Longview Fibre Co., is the new president of the Pacific Coast Association of Pulp & Paper Manufacturers, representing over 30 mills in three Coast states in labor negotiations and other activities, including joint labor-management safety conferences.

He succeeds Anson Moody, vice president and general mgr., Everett Pulp & Paper Division of Simpson Logging Co., who, incidentally, left on a European vacation soon after handing over the reins.

A. R. Heron, vice president of Crown Z was elected executive vice president; Howard W. Morgan, manager of Weyerhaeuser's Pulp Division, was elected vice president, and S. J. Robinson, vice president and general mgr., Publishers Paper Co., was elected treasurer.

Sid W. Grimes was retained in his permanent capacity as secretary with offices at 1233 American Bank Bldg., Portland, Ore.

A manufacturers' permanent jobs classification committee consists of: H. L. Wollenberg, president of Longview Fibre, Robert E. Bundy, executive vice president of Fibreboard Products Inc., and Peter T. Sinclair, vice president of Crown Zellerbach.

Named Managers

John W. Reimer has been appointed manager of Marathon Corp.'s new converting plant at Modesto, Calif. Henry A. Shannon, of Wausau, Wis., succeeded him as manager of the Sunnyside, Wash., plant.

Acetate Solvents, Crude
Acetate Solvents, Pure
Acetic Acid
Acetic Anhydride
Acetone
Acetylene, 15 psi
Air
Alcohols
Aluminum Ch
Aluminum P
Aluminum
Aluminu
Alums
Ammonia Gas
Ammonia Liquors
Ammonium Bisulfite (above 7.0 pH)
Ammonium Carbonate
Ammonium Chloride
Ammonium Hydroxide
Barium Cyanide
Barium Hydroxide
Bariu

Carbon Dioxide, Dry
Carbon Dioxide, Wet
Carbonic Acid, Carbonated Beverages
Chromic Acid
Chromium Potassium Sulfate
Citric Acid
Coke Oven Gas
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Iron Potassium Sulfate (Ferric Alum)
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Magnesium
Magnesium
Magnesium
Mercuric Chloride
Oxal Acid
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Phosphoric Acid
ic Acid, Aqueous

Sulfuric Acid
Sulfurous Acid
Tartaric Acid
Tin Chloride (Stannic)
Tin Chloride (Stannous)
Sulfate (Stannic)
Sulfate (Stannous)
Water, Acid Mine Waters
Water, Boiler Feed
Water, Distilled, Laboratory Grade
Water, Distilled, Return Condensate
Water, Fire Protection Equipment
nicipal)
Water, Fresh, Industrial Supplies
Water, Saline, Sea Water, etc.
Zinc ride

Name your poison

or any hard-to-handle fluid

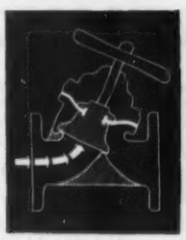
WORKING PRESSURES—up to 150 pounds, water, air, oil, or gas, 250°F. maximum temperature, depending on valve size, materials, and service.

CRANE HAS THE BETTER VALVE FOR IT!

Better because they're safer, easier to operate. *Better* because they reduce maintenance to a negligible degree. And that holds true for just about any service, any fluid within rated pressure and temperature.

For Crane now offers the revolutionary diaphragm valve in a new wide choice of body, disc insert and diaphragm materials—in unlined or lined patterns. You specify whatever combination best suits your particular need. The regular line-up includes brass, cast iron, aluminum, or 18-8 SMo body and disc . . . with diaphragm and disc insert of Neoprene, Buna N, Kel -F, or natural rubber. Regular linings are Neoprene or hard natural rubber. Also sliding stem valves for automatic operators of all types. In addition, Crane Diaphragm Valves are regularly available for high-vacuum service, or oxygen and acetylene usage. Other body and disc materials, as well as linings, available on special order. Sizes from ½ to 6-inch.

HOW CRANE DIAPHRAGM VALVES WORK



The Crane diaphragm serves one function only—sealing the bonnet. It is not subject to crushing and rapid wear. The seating member is a separate circular flat face disc, firmly attached to the stem and joined to the diaphragm with a special leak-proof connection. This independent seating feature permits positive shut-off with no loss of fluid, even in case of diaphragm failure.

NEW LITERATURE . . . NEW FILM

Get complete, interesting facts about the expanded line of Crane Packless Diaphragm Valves in a new 24-page folder . . . and a new sound movie. You'll see how this revolutionary valve solves flow control problems where others fail. Check with your local Crane Representative, or use the coupon below.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Illinois

Gentlemen:

I would like to arrange for a free showing of the Crane Diaphragm Valve Film ( ).

I would like a copy of Diaphragm Valve Folder ( ).

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Company.....

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City.....Zone.....State.....

CRANE CO.

General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Makes Own Worsted Yarn

Lockport Felt Co. has installed the first spinning-frame for worsted yarns in the felt-making industry, according to a report from Pres. Raymond J. Lee. In contrast to the woolen system of spinning which provides bulk, cushion and high felting qualities, the worsted system results in yarns of high density and smoothness, giving greater strength and uniformity.

Lockport pioneered the use of worsted yarn in papermakers felts in the early 1920's and the company feels that its new worsted spinning frame, first custom-designed machine of its kind, makes possible better quality, more scientifically-engineered and controlled product. Lockport Felt's Tenax Brand felts are manufactured entirely in the company's plant at Newfane, N.Y., all components being produced there, including warp and filling.

Harry Draudt Dies In New York City

Harry Draudt, veteran of many years in the market pulp sales field in both the East and Midwest, died suddenly July 14 in Grand Central Station, New York City. He had left his offices with Price & Pierce Co., on the way to his home.

New Organizations Representing Swedes

Changes in representation of Swedish equipment in Canada were anounced recently by organizations planning expansion in Eastern Canada and on the Pacific coast.

Harry Glenn, former director of product development for Canada Iron Foundries, Ltd., Three Rivers, Que., has been appointed vice president and general manager of Paper Machinery Ltd., Montreal, one of CIF's subsidiaries, succeeding G.L.M. (Gus) Hellstrom, retired, who held the title of president and managing director. T. F. Rahilly, president of CIF, retains the presidency of Paper Machinery.

Hellstroms still are in the business, Arne as assistant general manager and Klas as chief engineer. The company represents Kamyr.

Taking over representation for Svenska Flaktfabriken of Stockholm in Canada is the new SF Products Canada Ltd. of which Allan U. Wastvind is president. His office will be in Sun Life Bldg., Montreal. Hugh Holmberg will establish a Vancouver, B.C., office.

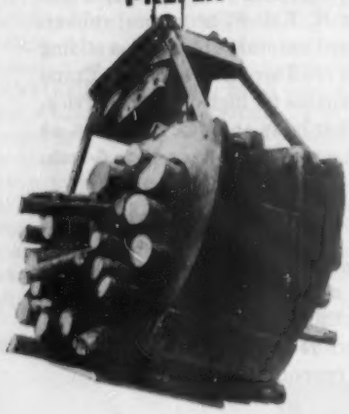
Halvar Lundberg of Seattle and Tore Ahlen, now of Vancouver, have formed a partnership, Lundberg-Ahlen Equipment Ltd. Mr. Ahlen is president and Mr. Lundberg treasurer, with the latter's son Lennart, secretary. A. H. Lundberg, Inc., of Seattle, continues separately.

HARRY GLENN (left), new Vice Pres. and Gen. Mgr. of Paper Machinery Ltd., Montreal, representing Kamyr, etc.; and ALLAN U. WASTVIND (right), Pres. of Svenska Flaktfabriken of Canada, Montreal, a new company.

Mr. Ahlen was with Svenska Flaktfabriken more than 20 years. He came to Seattle in 1937 and remained until 1944 when he went to Three Rivers to represent SF. Mr. Lundberg came from Sweden in 1921, in 1927 zecame western mgr. for Janssen & Co. in Seattle and in 1932 organized his own company.

Lundberg-Ahlen Equipment will represent lines handled in East Canada by Paper Machinery Ltd., and also Nichols Engineering, acid plant installations, Kamyr and Chemipulp Process, Inc.

WHY DO THE MOST EXPERIENCED PULP AND PAPER COMPANIES PREFER BLAW-KNOX GRAPPLES?



OUTSTANDING PERFORMANCE is only one reason why the leading Pulp and Paper companies continue to place repeat orders for Blaw-Knox Pulpwood Grapples.

Another reason is the dependability resulting from the many years of Blaw-Knox design experience.

Blaw-Knox Company is the foremost expert in designing Grapples for the economical handling of symmetrically stacked pulpwood.

Experienced Blaw-Knox engineers will gladly discuss your pulpwood handling problems and recommend the correct size Grapple for your needs without obligation.

Ask for Bulletin 2397.

BLAW-KNOX COMPANY
BLAW-KNOX EQUIPMENT DIVISION
Department 594
PITTSBURGH 38, PA.
Offices in Principal Cities

BLAW-KNOX GRAPPLES
FOR PULPWOOD AND LOGS

NEW WASTE WOOD CHIPPER

A waste wood chipper especially designed for sawmills who wish to make chips economically is offered in three disc sizes: 36", 42" and 48". Under normal operation these chippers can produce up to 15, 18 and 22 cords per hour respectively with low horsepower.

Tests made on southern pine slabs indicate that the chips produced by these machines may not need screening. The economy factor from this point alone is considerable. Most sawmills can pick enough clean wood off their waste conveyor to make a chipper installation well worth while, even without barking.

These chippers are ruggedly constructed and are designed especially for easy installation and low maintenance. These chippers are produced by the Hansel Engineering Company, 1500 Westlake Avenue North, Seattle 9, Washington. Inquiries in the South may be made to Owen-Richards Company, 1009 2nd Avenue North, Birmingham 4, Alabama.

Comparative tests made with the Hansel chipper and other chippers on Southern pine slabs indicate that the Hansel chipper makes a superior paper with greater strength. As a result of these tests several of these chippers are being ordered by a large kraft mill in the South.

(ADVERTISEMENT)

Mechanization--key to profit

This LS-52 averages only 20 minutes to load 18 cords on this rack car. Speed-o-Matic controls and independent swing and travel assure fast, accurate placement of loads even on far side of car.

Link-Belt Speeder shovel-cranes increase output, conserve labor, reduce your costs!

LEADING pulpwood handlers throughout the U. S. and Canada find that a Link-Belt Speeder with Speed-o-Matic controls is their best answer to moving bigger cordages at lower costs. These fast, extremely easy-to-handle rigs frequently demonstrate efficiency which is almost unbelievable. In fact, several companies report that their Link-Belt Speeders have paid for themselves in one year—in reduced demurrage charges alone!

Prime factor behind the Link-Belt Speeder's superiority for pulpwood handling is its Speed-o-Matic power hydraulic control system. Speed-o-Matic provides true, feel-of-the-load, finger-tip-touch control . . . assure fast, safe and accurate load handling with a sling, grapple or pusher blade.

For complete details on Link-Belt Speeders, how they're improving pulpwood handling methods—see your distributor. Or write for free 16-page illustrated booklet, "How to cut costs, speed pulpwood handling at the mill—in woodlands."

When LS-52 has all cars loaded, slings are removed and replaced with a concrete bumper. Due to accuracy with which far side load has been placed, only near side has to be bumped. In slack periods, fully convertible LS-52 can be rigged as shovel or hoe to build access roads, dig drainage ditches, etc.

LINK-BELT SPEEDER CORPORATION, Cedar Rapids, Iowa

13.476

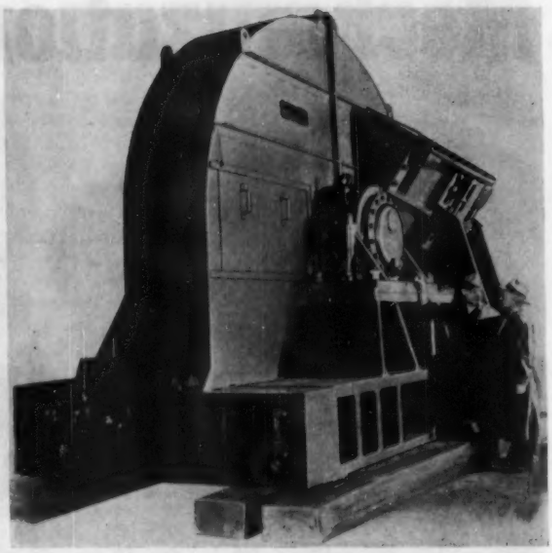
BUILDERS OF A COMPLETE LINE OF CRAWLER, TRUCK AND WHEEL-MOUNTED SHOVEL-CRANES

LINK-BELT SPEEDER

Killed Flying to Opening Of New Rayonier Mill

Flying to Jesup, Ga., for the formal opening ceremonies on June 23 of Rayonier's new $25,000,000 chemical cellulose mill, four Wisconsin Rapids, Wis., business men, widely known in the Wisconsin valley paper industry, were killed in a plane crash near Atlanta.

They had almost reached their goal. They were D. L. Jensen, pilot, Harry Walker, a banker, Ray Melville, owner of a concrete products firm, and Ernest Schroeder, owner of a trucking firm. Mr. Melville's son-in-law, Ralph Kutchera, served as construction engineer for the Rayonier mill.



LARGEST PULPWOOD CHIPPER ever produced by D. J. Murray Mfg. Co. was recently shipped to Port Angeles, Wash., for installation in the new wood department of Rayonier pulp mill. The chipper, which has 150-in. diameter steel disc, 12-in. thick, with 8 knives, required two specially designed cars of the Milwaukee Road for shipment. The Murco chipper is designed to cut logs up to 36-in. diameter, 20 ft. long, and can reduce them to pulpwood in about 10 sec.

Carpenter Names Coddington Tube Div. Mgr.

P. L. Coddington has been appointed manager of the Alloy Tube Division of the Carpenter Steel Co., Union, N. J. His appointment was announced by F. R. Palmer, company president. Mr. Coddington has been assistant to the president at the firm's Alloy Tube Division, and formerly was manager of sales at the same division.

Giant Chipper Goes to Rayonier

A pulpwood chipper, largest of its type, has been shipped by D. J. Murray Manufacturing Co., Wausau, Wis. to Rayonier, Inc., Port Angeles, Wash. The chipper is so large it required two specially designed r.r. cars.

It will produce chips from 100 cords per hour. It has a 150 in. diameter Lukens steel disc, 12 in. in thickness on which 8 knives are mounted, and designed to cut up whole logs up to 36 in. diameter and 20 ft. long, reducing them to chips in a few seconds.

This largest Murco chipper will be used on hemlock mostly for dissolving pulp.

Chemical Pulping Processes

Chemipulp's high degree of chemical, mechanical and physical control over materials and operations results in maximum plant output, high pulp quality, and low operating costs.

- Circulating Systems
- Chip Distributor
- Chip Pretreatment
- Waste-Liquor SO_2 Gas and Heat Recovery
- Stripping Towers
- Tail Gas Towers
- Hydroheater
- Spray-Type SO_2 Gas Cooling System
- Acid System (Bubble Absorption)

Chemipulp Process Inc.

Watertown, N. Y.

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Chemipulp Process Ltd., Crescent Bldg., Montreal, P. Q.

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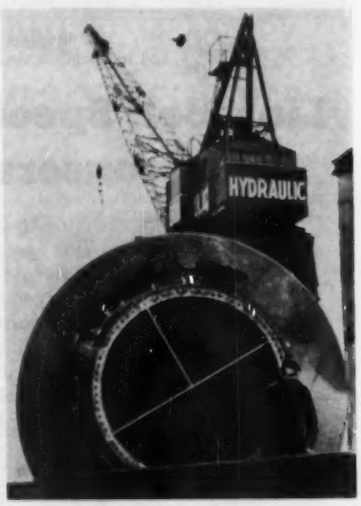
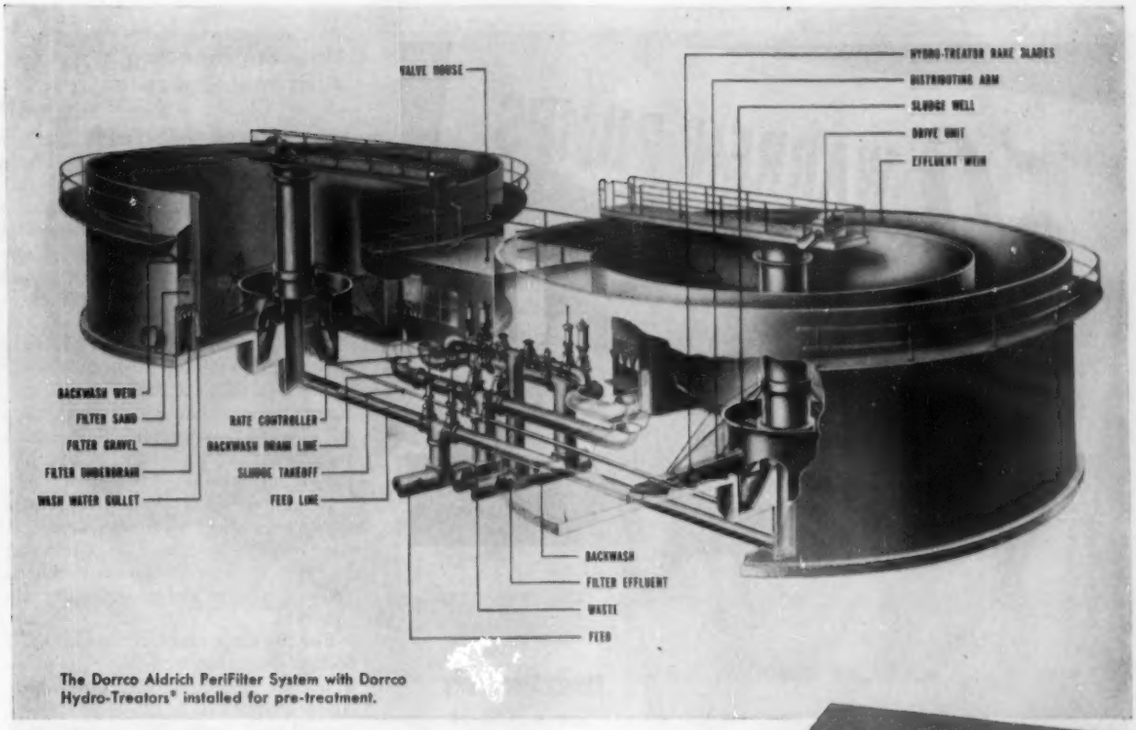
Pacific Coast Representative

A. H. Lundberg, Orpheum Bldg., Seattle 1, Wash.



NEW SURFACE CONDENSER FOR COAST PULP MILL

CARPENTER STEEL Co., Alloy Tube Div., Union, N. J., stainless steel tubing went into this Hydraulic Supply Mfg. Co. (Seattle) surface condenser for a Puget Sound pulp mill. Approximately 5½ miles of type 430 tubing (1496 lengths, ea. 20 ft.), 1¼ in. o. d. 16 ga. went into the condenser, specially designed for condensing blow down steam from digesters. It is suspended inside a steel tank to separate any pulp particles from vapor and permit them to drop into the tank away from heating surface to prevent plugging. Complete heating surface is easily replaced. Measurements are 13 ft. diam., 32 ft. long. Weight: 35 tons.



The Dorrco Aldrich PeriFilter System with Dorrco Hydro-Treators® installed for pre-treatment.

New System Cuts Water Filtration Plant Construction Costs Up to 40%

40%

Pulp and paper producers can realize savings up to 40% in water filtration plant construction costs . . . and at the same time get improved operation compared with conventional methods. Both advantages are now possible with the Dorrco Aldrich PeriFilter System. A single PeriFilter consists of a Dorr pre-treatment mechanism surrounded by an annular rapid sand filter and two or more of these dual units are usually manifolded to form the System.

Here's how the PeriFilter cuts costs . . . A unique design permits installation of both pre-treatment unit and filter in the same tank. Valves and piping are greatly simplified. Reduced head losses and simple operation add up to lower operating costs.

Here's how the PeriFilter improves operation . . . Transfer from pre-treatment unit to filter is over a submerged weir so floc breakup is practically nil. Maximum water depth over the filter eliminates air binding. A variety of pre-treatment mechanisms are available for every water treatment need.

We're sure you'll want more information on this new development in water treatment practice. Bulletin 9042 describing the Dorrco Aldrich PeriFilter System will be sent on request, and a Dorr Engineer will gladly supply you with additional information. THE DORR COMPANY, Stamford, Conn. *In Canada:* 26 St. Clair Ave., E., Toronto 5.

*Trade Mark Reg. U. S. Pat. Off.

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Better tools TODAY to meet tomorrow's demand

DORR

FIFTY YEARS 1904-1954

WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

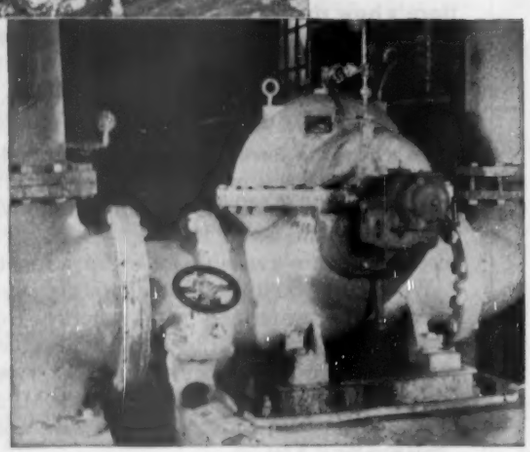
Offices, Associated Companies or Representatives in principal cities of the world.

50 WARREN PUMPS at ST. REGIS

Kalamazoo plant alone,

not to mention many others in their numerous mills in various areas. Time-tested, favorable experience with this equipment is behind their selection and dates back over a long span of years and includes important expansion and modernization programs.

Warren Stock Pump
Type 4-SOD-12
Head, 100 ft.,
GPM, 300, Speed,
1740 RPM



Warren Fan Pump
Type 12-DM-13
Head, 30 ft.,
GPM, 4000,
Speed, 875 RPM

If you, too, are interested in low pumping costs and dependable service over the years, it will pay you to specify:

PP-30

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC.
Warren, Massachusetts

How Engineering Aids Mill Operators

Continued from page 65

comes the operator and start up problems due to inexperienced crews at this point are minimized.

All pumps and piping in contact with stock and white water were of corrosion resistant material. Fabricated stainless steel, rubber covered steel, wood pipe and plastic coatings were used.

Hot lime conveyors are elevated to permit maintenance and allow good loss of heat from the equipment. Lime is handled from storage in vibrating pan conveyors which have been successful in low maintenance and freedom from dust.

Selection of a Minton vacuum dryer was based on the past experience of the company in operating this type of dryer, wherein excellent steam economy and good quality are inherent.

For the filter plant, three tanks 120 feet in diameter was resorted to as a matter of economics and better space utilization. A single section of curved wall forms, 50 feet long, was used for the entire wall forming of the three tanks. This section of forms was reused 24 times.

Cooperated with Pollution Officials

Plans for waste disposal were submitted to state authorities early in the project and the final plan was the result of joint effort of the company and state technical men. All wastes which could possibly contain any concentration of chemicals or waste liquor are pumped to a central collecting tank, then conducted under the river to an impounding lagoon (30 acres). On tidal runouts, outlet gates of the lagoon are opened. This prevents effluents being carried up river and causing damage to migrant salmon.

The river crossing is through a 1600 ft. wood pipe in a trench on river bottom. Glued wooden collars hold 200 ft. sections together and concrete ballast rings are installed between each wooden hoop.

Collect top relief gases and other non-condensable relief gases are oxidized with chlorine water for odor elimination.

No facilities for chip production are on the mill lot or are a part of the pulp mill managerial unit. Unusual features are use of corrugated aluminum for conveyor covering (5,000 ft. from two nearby sawmills) and suspension of the cone bottom from the walls of the silo as in steel tank construction.

Relief... for a production pain

What's your particular "ache"? Looking for ways to cut costs... improve production... speed plant operations... reduce maintenance costs?

Here's a prescription that can provide an effective solution for you... the specialized service offered by your Chain Belt Field Sales Engineer and the outstanding performance of Chain Belt Equipment:

for example: If you want to increase capacity of your wood chip belt conveyors, Rex Wood Chip Idlers are your answer. Because concentrating rolls are sloped at a 45° angle instead of 20°, you can load chips close to the belt edge without spillage... increase conveyor capacity considerably.

for example: Tried belt transportation for logs? Where conditions are right, belt conveyors can help you increase production... reduce pulpwood handling costs. And, Rex Extra Heavy-duty Flat Belt Idlers are designed especially for this service... to operate efficiently with logs piled high on the conveyor.

for example: If maintenance is your problem, here's a suggestion. Use Rex Split Hardened Rim Traction Wheels and Sprockets. Just install the body, then each rim segment. Replacement of rim section can be done without removing the chain. Down time can be reduced with these long-wearing traction wheels and sprockets.

Whatever your needs... drive chain, conveyor and elevator chain, complete elevators, belt conveyors, feeders, roller bearings, buckets or sprockets, you'll relieve those production pains by looking to Chain Belt. See your local Field Sales Engineer or write direct to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

District Sales Offices and Distributors in all Principal Cities

450 OF THE NEW TIDLAND pneumatic wind & unwind SHAFTS

are making money for mills throughout the U.S. and Canada...

Custom-built in any length or diameter. Highest quality workmanship

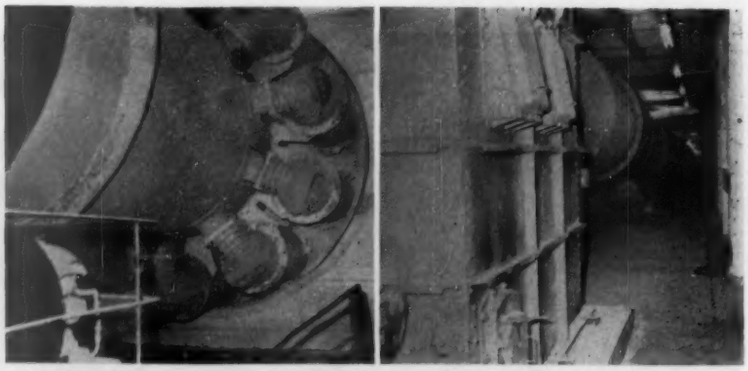
Covered by U.S. and Canadian patents.

(A) Sturdy leaf-type collapsible shaft for surface rewind. Steel leaves are expanded uniformly by air pressure in high grade rubber inner tube . . . No screws, nuts or other parts to shake loose . . . By deflating tube, the shaft can be removed quickly and without effort.

(B) Lug-type mill roll shaft requires no chucks, sledge hammers or set screw wrenches. Air pressure forces lugs against full length of paper roll to eliminate deflections and permit higher operating speeds. Shaft graduated in inches to speed up setting rolls of different lengths and to eliminate collars and stops.

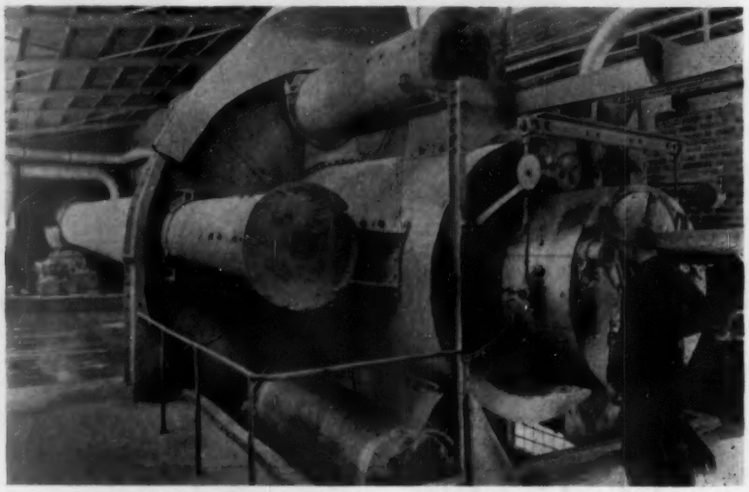
For further information write or wire:

TIDLAND SHAFTS
Manufactured by Tidland Machine Co.
CAMAS, WASHINGTON



LOW RECORD MADE AT HUSUM

(Left) Unax cooler in sulfate mill at Husum, Sweden, where lime burning heat consumption is low. (Right) the 10 by 250 ft. Unax kiln at Husum.



FIRST FED FILTER CAKE FROM BIRD CENTRIFUGE

First Scandinavian kiln so fed is this 8 by 135 ft. Unax kiln at Obbala, Sweden, sulfate mill.

Reports Kiln Efficiency in Sweden

By Jan Friis-Hansen
Special Applications Engineer
F. L. Smidth & Co.

First rotary kiln in Scandinavia and one of the first in the world for reburning lime sludge was placed in operation in 1905 in the pulp mill of Stora Kopparbergs Bergslags A/B at Skutskar, Sweden. In 1950 the first rotary kiln with high fuel efficiency for recovery of lime was installed in Scandinavia when the Enso-Gutzeit mill at Kotka placed a modern Unax kiln in operation. During the ensuing years, several sulfate mills in Finland, Sweden, and Norway adopted this type of kiln.

The original short, producer-gas-fired rotary kiln for burning lime sludge used about 15 million btu per short ton.

The modern fuel saving oil-fired Unax kiln uses less than 7 million btu per short ton.

By way of comparison, an ordinary oil-fired kiln of today's conventional design uses about 9 million btu/short ton, nearly 30% higher.

Using a Unax kiln, a pulp mill with an annual capacity of 100,000 tons would save around $17,000 per year in fuel costs, figuring approximately $2.40 per bbl. of oil.

Reburning of lime sludge at a heat consumption as low as 7 million btu/short ton is achieved by an installation in Mo och Domsjo mill at Husum, Sweden.

At this mill, lime sludge from the Dorr causticizing plant is pumped to

two tall homogenizing silos into which small amounts of compressed air are injected at regular intervals. This ensures a homogeneous composition of the sludge when pumped to the rotary slurry feeder for the vacuum filters producing filter cake for the kiln.

The 10 by 250 ft. rotary kiln was supplied by F. L. Smidth & Co. of Copenhagen, who also engineered the entire reburning plant. This kiln is equipped with a special chain system in the upper part and a Unax cooler, integral with the kiln. The cooler consists of a number of cylinders arranged concentrically around the outlet end of the kiln and rotating with it. In the cooler tubes, the combustion air is preheated while cooling the burned lime as it passes through the cooler. The cooler cylinders are provided with internal heat exchangers.

The lime discharged from the Unax cooler has a temperature of about 175° C (350° F). It is conveyed by a drag chain conveyor and an elevator to the silos above the three Dorrco slakers, one of which is used for making milk of lime for the production of hypochlorite for bleaching.

At this plant, slaking of cooled, burned lime for causticizing has been successful. This is a complete change from slaking of reburned lime while red hot.

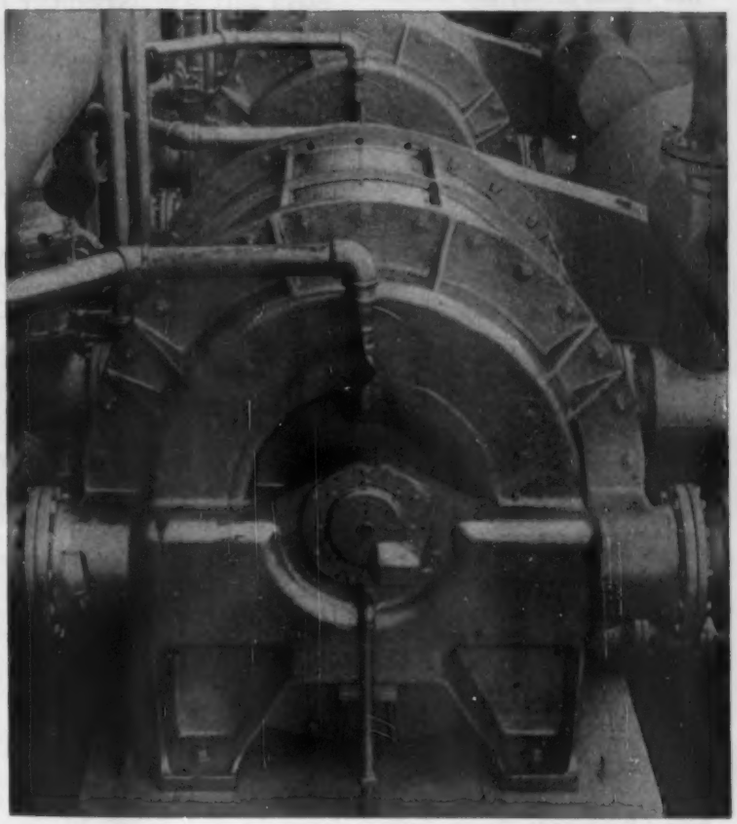
The kiln operator checks the quality of the burned lime at brief intervals by means of a calcimeter. To facilitate the control of the kiln operation, all instruments are arranged in a centralized control panel, which also contains controls for all electric motors.

The kiln output at this plant is 110–135 short tons per 24 hrs. This may be somewhat lower than could be expected from a kiln of this size, but, on the other hand, the oil consumption is only approximately 45 gallons per short ton of well burned lime, equivalent to approximately 6.8 million btu/short tons.

Exit kiln gases are practically dust free, despite the fact that the amount of make-up lime at this plant is considerable, as more than 15% of the burned lime produced by the kiln is used for the manufacture of hypochlorite for bleaching. It has not been found necessary to install dust collecting equipment for the kiln.

Recently, Holmsunds A/B (Svenska Cellulosa Aktiebolaget) at Obbola installed an 8 x 135 ft. Unax kiln, first Scandinavian kiln fed with filter cake from a Bird centrifuge. Heat consumption as low as about 6.9 million btu/short tons has been obtained.

High machine speeds? High temperature headbox stock? You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

441 WILSON ROAD, SO. NORWALK, CONN.

POSITIONS OPEN

We can place—Manager for 2 large Fourdrinier machine paper mills; mgr. for group of board mills; cellulose wadding plant mgr.; supts. and asst. supts. for kraft paper mills; board mill supts. (2); supts. for finishing and shipping.

Comptroller; 2 quality control men; design draftsmen; industrial engineers; power house supervisor.

Salesman coarse papers, twine and cordage, N.Y. City area; board salesman for New England territory with headquarters in Boston; salesman bogus wrapping paper, Midwest territory.

If you are available for a position in paper or pulp mfg. or paper converting, SEND US YOUR RESUME. It will be in confidence. No charge unless you accept employment through our Service.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St.
Phone: LIberty 2-6547 Boston 8, Mass.

WANTED

MECHANICAL DESIGN ENGINEERS for plant layout and automatic machine design. Positions entail wide range of engineering work, some electrical. Experience in pulp, paper or wallboard plants desirable but not necessary. Reply giving complete details of experience and training. Opportunities for advancement. Salary to start $5,000-$7,000 depending on age and experience. Location South. Reply Box 173, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

PAPER MILL SUPERINTENDENT

South American mill needs superintendent for modern Fourdrinier machine. Bag paper experience necessary, wrapping and specialties desirable. Excellent opportunity, good salary. State industrial experience, educational background, age and family status. Replies will be held in confidence. Box 182, PULP & PAPER, 370 Lexington, New York 17, New York.

YOUNG GENTLEMAN. British. At present sole representative in Hongkong of British paper exporters, desires emigrate to Canada. Available first half 1955. Twelve years experience paper trade export and local consumption. Reply Box 184, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

PULP AND PAPER MILL located in Warrenburg, N. Y., interested in securing permanent year around connections for Yankee Fourdrinier M. G. Grades, toweling, saturating papers, ground wood and sulphite specialties. Address all correspondence and inquiries to Thomas A. Galante & Sons, Inc., P. O. Box 150, Mechanicville, N. Y.

WANTED

PAPER MILL SUPERINTENDENT for new extra wide cylinder board machine located in the South. Furnish to consist of bleached kraft and bleached hardwood pulps.

Experienced in the manufacture of food board specialties and capable of understanding and developing many innovations incorporated in the new paper machine.

Submit age, education, experience, present position and past positions.

Box 183, PULP & PAPER,
370 Lexington Ave., New York 17, N.Y.

FOR SALE

3 — 60″ Paper Creping Machines

2 — 60″ Heavy Duty Waxers

1 — 54″ Waxer

1 — 30″ Glassine Side Waxer

1 — Kidder Printing Press, 48″ Wide, 30″ Repeat, 3 color

and

Sheeters • Slitters •
Guillotine Knives
Bag Machines
Schultz Rewinders

Above all complete with Motors

American Tissue Mills
Holyoke, Massachusetts
Telephone 5621

FOR SALE
PAPER MILL
VICINITY
Holyoke, Massachusetts

Two Yankee Machines. Will make Facial Type and Thin Papers. Capacity — 10 TONS Daily.

ALSO

Bleaching Plant—Water Power Storage Warehouse

SKILLED HELP
Available Locally

This Mill is in excellent condition and was in operation up to a short time ago.

Included are many items too numerous to mention.

For further information contact:

American Tissue Mills
Holyoke, Massachusetts

Telephone 5621

FOR SALE—FRICTION CALENDER

Top Steel Roll: 41″ Calender surface, 49½″ face bored for heating and cooling.

Centre Roll: 41″ Cotton calender surface, 49½″ face. We have two spare cotton rolls; one is new.

Bottom Roll: 41″ face, tapered ends to 50″.

Box 185, PULP & PAPER,
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proven by performance

Sutherland Inc. Pressure Washing*
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PRESSURE WASHING

SUTHERLAND REFINER CORPORATION
TRENTON 8, NEW JERSEY

*U. S. Patent No. 2,355,091

Canadians Hear of $32,000,000 from Salvage

PICTURES BY A PULP & PAPER EDITOR AT VICTORIA

(L to r) K. C. LOGAN, Northeastern Paper Products, and J. C. BROWN, Weyerhaeuser Timber Co., Springfield, Ore.; WENTWORTH BROWN, formerly of Brown Corp., now Pres. of Columbia Cellulose Co., Vancouver, and J. B. JONES, Asst. Mgr. of Mfg., Ontario Paper Co., Thorold, Ont., chairman of Technical Section; ANDREAS CHRISTIANSEN, Mgr. of Prod., Spruce Falls Power & Paper Co., and PAUL ROBERTS, Gen. Mgr., Alaska Pine & Cellulose Ltd., Vancouver.

(L to r) KEITH EADIE, Plant Engr., MacMillan & Bloedel, Port Alberni, GEORGE HILLS, Powell River Co., GEORGE MacGILLIVRAY, Gen. Supt., Pulp Mills, Powell River, and L. W. PUMPHREY, Gen. Supt., Westminster Paper Co.; FRED RILEY, formerly of Powell River and now with Don Charles Agency, Seattle, with E. J. CARRIVEAU, Supt., Ontario & Minnesota Paper Co., Fort Frances; HERBERT O. TEEPLE, International Nickel Co., New York; Dr. LINCOLN THIESMEYER, Pres. Pulp and Paper Institute of Canada, BOB LAW, International Nickel Co., Montreal, and KEN CRAWFORD, Union Screen Plate Co. of Canada, Montreal.

(L to r) HARRY ANDREWS, Vice Pres. Powell River Co., A. C. R. YUILL, Dominion Engineering Co., Vancouver, and WILLIAM DORNING, Dominion Engineering, Montreal; ROY OTT, Consultant and former general supt., and WILLIAM H. EGAN, Mill Mgr., Donohue Bros., Clermont, Que.; NICHOLAS SHISKO, Asst. Chief Engr., Abitibi Power & Paper Co.; T. NEWMAN McLENAGHEN, Control Supt. of Abitibi's Fort William Div., and W. A. PLANT, Res. Mgr., Abitibi's Smooth Rock Falls Div.

STRIKING ADVANCES towards fuller utilization of raw materials and integration of processes were emphasized at the Summer meeting of the Technical Section, Canadian P. & P. Association in Victoria, B.C., June 14-18.

Many of the 300 delegates from Canada and the U. S. toured Vancouver Island mills at Harmac, Port Alberni, Elk Falls and Victoria.

Integration was keynoted by Paul E. Cooper, president of Crown Zellerbach Canada Ltd. and the affiliated Elk Falls Co., and board chairman of C P & P A, at the banquet, presided over by J. B. Jones, Ontario Paper Co., section chairman.

"All primary mills in British Columbia", said Mr. Cooper, "are now fully integrated to effect economies in processing and more complete utilization of resources. Most larger sawmills and plywood plants have installed hydraulic barking and chipping. Small as well as large logs are processed. Of the 335,000 tons of kraft market pulp that will be produced this year in British Columbia, about 85% will be from sawmill residue and salvage wood.

"Wood formerly wasted and now utilized by pulp mills represents about 25% of total income derived from the province's industry—about $32 million, and waste wood consumed can be greatly increased. Sixteen chippers now operate in lower British Columbia independently of pulp mills."

J. C. Brown, Kraft pulp superintendent, Weyerhaeuser Timber Co., presented data on yields achieved through integrated utilization at his company's Springfield, Ore., mill.

A paper on high yield sulfite pulping with a soluble base, by the Pulp and Paper Research Institute of Canada, reported an investigation under way three years. The emphasis has been on pre-treatment and cooking aspects of the sulfite process to produce a material fiberized easily into a high-yield slush pulp. The Va-Purge process for pre-treatment has been used.

While several leads ended in a blank wall, others were followed to a successful conclusion. One was the development of a high-temperature, high pressure electrode which can be used for measuring the pH in a digester under cooking conditions. Another was a means for measuring the degree of cooking, or the cohesiveness, of the ease of fiberizing, of partially cooked chips.

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LEON J. LIEBERMAN (below, right), Alan Wood Steel Co., Consohocken, Pa., (right), discusses samples of Algrip safety plate with FRED G. GREAVES and FRED G. GREAVES, Jr., (standing) Seattle, mill representatives in Pacific Northwest.

AW Algrip For Safety In Wet Mill Areas

Acceptance of "AW Algrip," abrasive-impregnated roll steel plate by this industry has been extensive, reports Leon J. Lieberman of the Alan Wood Steel Co. to PULP & PAPER.

On a six-week Coast trip, he directed an Alan Wood's exhibit in Los Angeles showing fabrication of Algrip, and a 30° inclined Algrip walkaway.

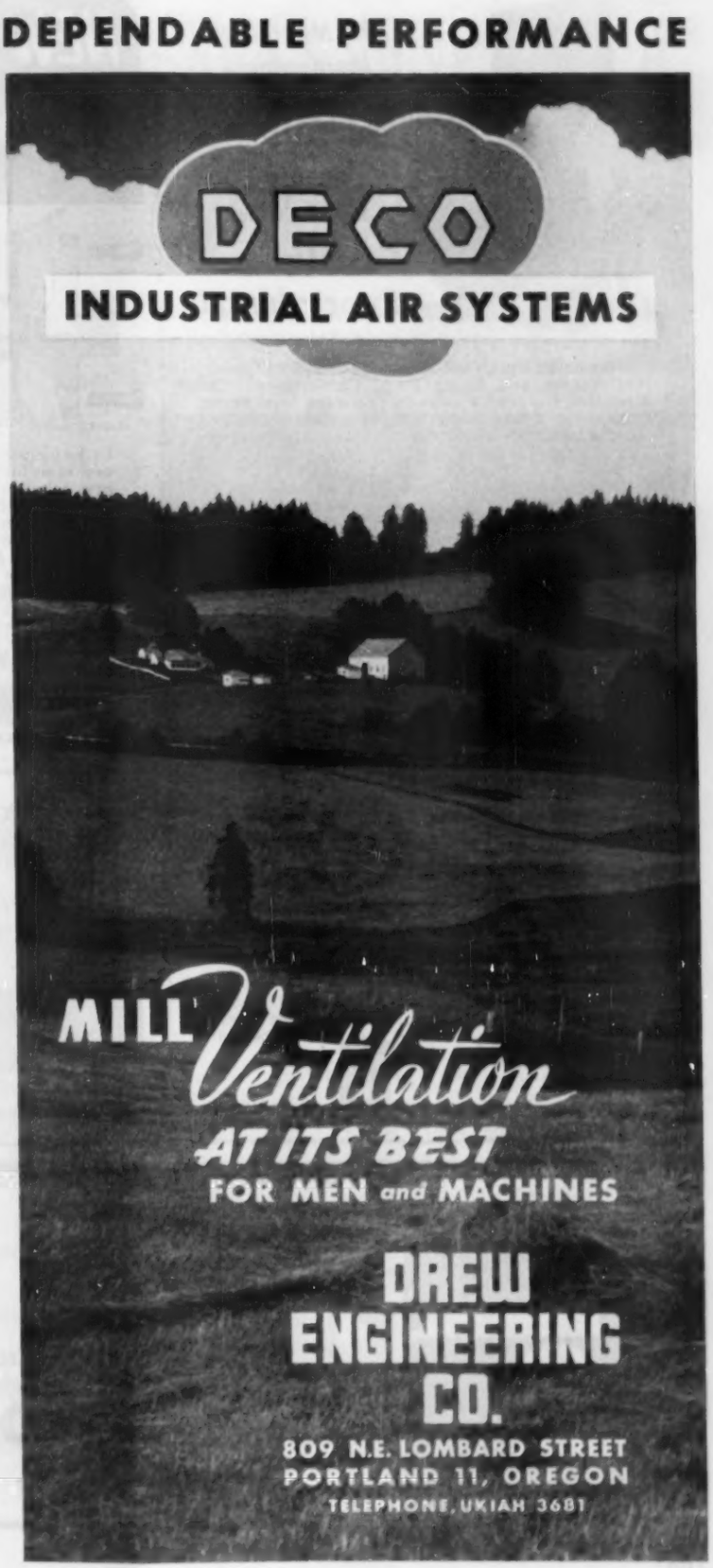
Mr. Lieberman is recognized as a pioneer in development of Algrip, used around digesters, paper machines and other spots apt to be wet. Thicknesses range from ⅛ to ½ in. He reported orders in the first five months of 1954 ran 31% over the same 1953 period.

"Algrip makes for safer working conditions," he said. "Companies using it save thousands of dollars in insurance premiums."

Outlets include Fred G. Greaves and son, Seattle; Ray Smythe, Portland, Ore.; Al Garnjost, San Francisco; Alan Wood Steel Co., Atlanta and Los Angeles; A. M. Castle & Co., Pacific Coast and Milwaukee; Kasle Steel and Jones & Laughlin, Detroit; McCormick Steel, Houston; Brown-Wales Co., Boston; Bridgeport Steel, Milford, Conn.; Ernst Iron Works, Buffalo; A. C. Leslie & Co., Toronto and Montreal.

May Be A Candidate

Widely known in paper industry management as top legislative advisor to the Paper Trade Association, Rep. Jacob K. Javits of Manhattan is widely mentioned as a Republican candidate for N. Y. State attorney-general. He also has Liberal party support.



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Sumner Iron Works, Everett, Washington, W. Coast Rep.; Canadian Sumner Iron Works, Ltd., Vancouver, B. C., Canadian Rep.

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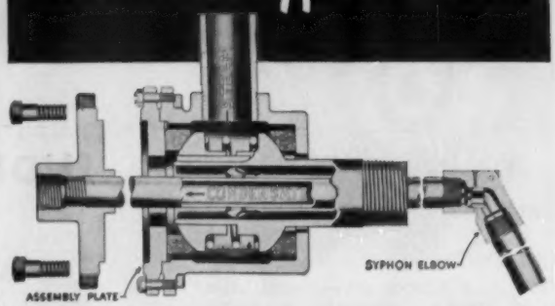

In the picture above you see a combination of welcome new ideas for the paper industry. It is built around the new Johnson Joint, which has been redesigned for lighter weight, lower cost, longer operating life. There's a special assembly plate to hold internal parts in position when the head is removed to get at the syphon pipe. And the syphon elbow is new altogether. It permits the use of straight pipe for the syphon connections, forms a tight seal when in position, and can be inserted or withdrawn right through the joint body, in many cases while the machine is operating.

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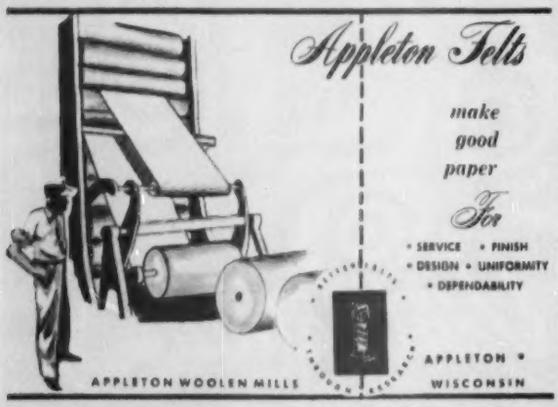

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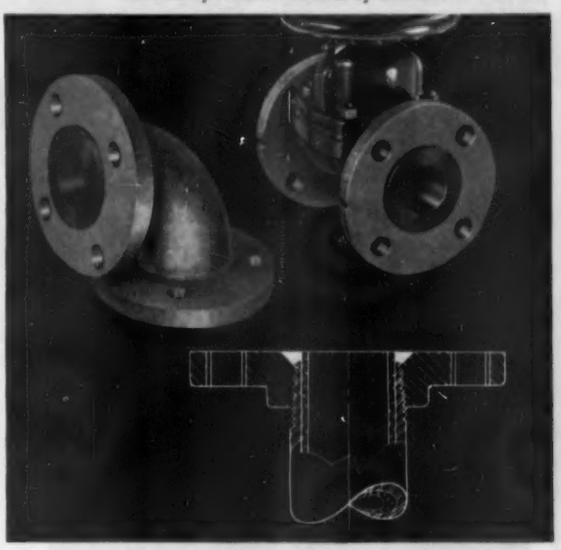

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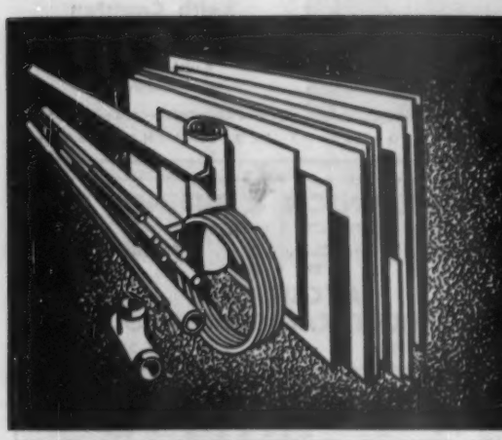

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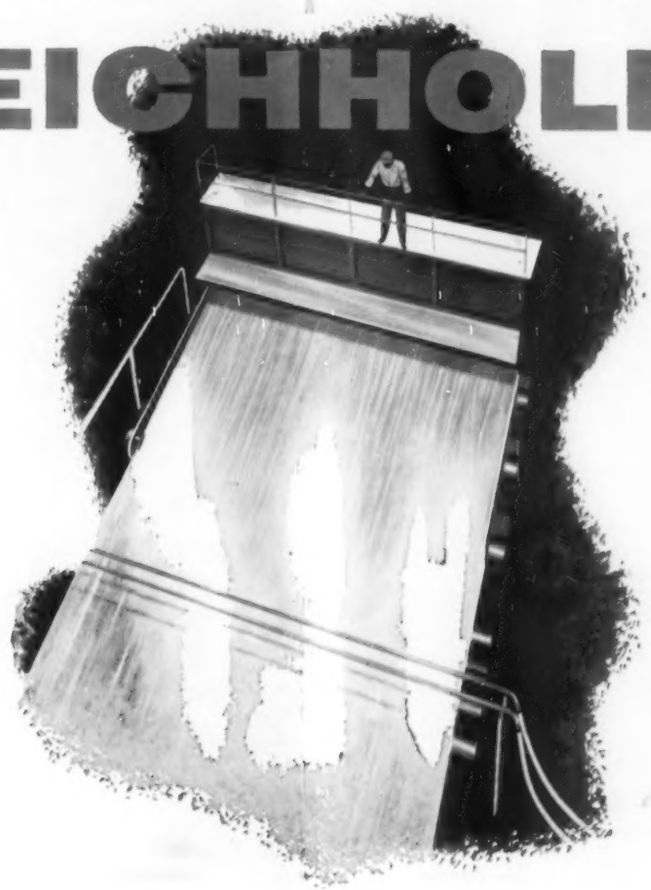

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